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ABSTRACT

This report evaluates the influence of five language programs on the learning of children in year-round Head Start programs. It presents the statistical analysis and design of an investigation conducted in ten classrooms in two sites (Henderson, North Carolina and Vero Beach, Florida). The core of the programs was the Buchanan Readiness in Language Arts program with four combinations of supplements. A monitored and an unmonitored control group were used in each site. It was hypothesized that the experimental classes would outrank the controls in a predetermined order. Although significant differences were found on several subtest measures, the data did not support the hypothesis. The experimental groups, in general, outperformed the control groups on only two of the pre- posttest measures (alphabet and letter recognition). Appendixes comprise one-half of the document and include two manuals for teachers (Buchanan-Swanson Supplement and the Reinstein Reinforcement Program), cover letters and sample questionnaires used in the language program evaluation, a listing of instruments common to national evaluation projects, forms and reports used for a variety of tests and testing conditions, a listing of personnel, and the tables from statistical analyses. The interim report emphasizing the general rationale for this investigation is available as PS 003 680. [Filmed from best available copy.] (WY)

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AN INVESTIGATION OF THE RELATIVE EFFECTIVENESS OF SELECTED CURRICULUM VARIABLES IN THE LANGUAGE DEVELOPMENT OF HEAD START CHILDREN

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PART ONE

THE INTRODUCTION

In the late summer of 1968, the Evaluation and Research Center for Project Head Start at the University of South Carolina began its third year of evaluating year-round Head Start programs in the Southeast. The 1968-69 evaluation differed from the two previous evaluations in two important respects. First, the South Carolina Center was allowed and encouraged (as were other centers) to participate actively in the design of evaluation procedures including intervention techniques for use in its assigned region. Although common national data again were collected by each of the centers across the country, each center was also free to test the effectiveness of selected and/or constructed intervention techniques subject, of course, to national approval. In effect, a strong experimental dimension was added to the generally normative nature of the previous evaluations.

The second respect in which the evaluation work of the South Carolina Center differed during 1968-69 was in the existence of cooperation and continued communication with two other centers following the same evaluation design. The University of Texas and Tulane University had worked with the University of South Carolina in the development of the evaluation procedures, and they in fact replicated the investigation in their respective regions.

In summary, it may be reported that the South Carolina replication proceeded with a minimum of difficulties and all testing schedules and quality control criteria were met. The intervention language development program was conducted as planned at both the Henderson, North Carolina, and the Vero Beach, Florida, centers. The present document is a final report of the evaluation and includes a statement of the problem, the evaluation design, the evaluation procedures, the analysis of the data, and the investigators' conclusions and recommendations.

PART TWO

STATEMENT OF THE PROBLEM

The evaluation of the effectiveness of Project Head Start programs across the nation has been a most difficult task for fairly obvious reasons. Project Head Start is not monolithic in nature. Programs differ from locale to locale, with respect to many variables--the type of children served, the philosophies of the personnel involved, the available equipment and material, and the degree of parental and community involvement, to name only a few. There are certainly excellent Head Start programs and there are probably poor ones. Thus, a general common evaluation of a large number of programs is likely to produce data of indifferent or contradictory implications. Naturally, it has been impossible to rigorously control (even if this were desirable) the instructional programs of the various centers.

Recognizing the above to be true and welcoming the encouragement of the Office of Evaluation to concentrate on intervention programs in controlled situations, the staff of the Evaluation and Research Center at the University of South Carolina selected language development as a critical instructional area. Further, various combinations of programs, materials, and extent of teacher training were identified as independent variables for evaluation. Thus, the general problem of the evaluation was to select and/or

develop certain language development programs, materials, and types of teacher training to accompany these materials; and then to compare combinations of these in a controlled investigation.

PART THREE

THE EVALUATION DESIGN - A SUMMARY

Rationale: The Prominent Variables

Inasmuch as the evaluation was intended to assess the effectiveness of programs in language development, the first step in the design was that of identifying those instructional variables to be included. A basic consideration was the selection of "packaged" (already developed, tested, and published) programs insofar as this was possible in order to increase the consistency of the instructional programs across experimental groups.

The Buchanan Readiness in Language Arts[1] program almost immediately appeared to have significant relevance. The Buchanan program is one of the few programs available in reading readiness designed for preschool children; it is based upon what appears to be sound learning theory considerations and it is phonetically consistent in its presentations. Experiences in following instructions, discriminating visually, learning to pose appropriate questions, making predictions, and drawing accurate conclusions are all integral elements of the Buchanan program. Just as importantly, the child's initial experiences with classroom learning are designed to be highly successful.

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[1]Cynthia Dee Buchanan, Readiness in Language Arts (Palo Alto, Calif.: a Sullivan Associates Program from Behavioral Research Laboratories, 1967).

The program includes basic language arts skills and concepts; and the special emphasis on reading and spelling provides the learner with a good headstart while providing a continuing series of successful experiences. In view of the apparent appropriateness of the Buchanan program, the decision was made that it would be a common base in each of the experimental groups.

The second prominent variable selected for the evaluation was the use of supplementary programs in combination with the Buchanan program. The first of these to be defined was the "teacher innovated" supplement suggested by the Buchanan. This provision allows the teacher to freely supplement the basic program with her own materials and techniques. No formal materials are supplied. The next supplement chosen was the enrichment materials developed and recommended by the producers of the Buchanan program; a teacher's manual with extensive instructions is provided. The third supplement, the Swanson Supplement, was developed and packaged at the University of South Carolina especially for use in the present evaluation. (See Appendix A for sample materials from Swanson Teacher Manuals.)

A third variable to be evaluated was the use of a specifically defined reinforcement schedule which was developed at the University of South Carolina for use in the evaluation. (The teacher's manual for the Reinstein Reinforcement Program is presented in Appendix B.)

The final prominent variable to be tested in the investigation was varying degrees of orientation and teacher training

in the use of the Buchanan program and of the various supplements. Some teachers would be given only short orientation periods; others would receive more extensive instruction in both the use of one or another of the three supplements and the Reinstein Reinforcement Program.

The general evaluation design included five experimental groups of two classes each in each of the three regions (Southeast, Mid-south, and Southwest) and three control classes in each of the regions. The general configuration of the design, including all three regions, is presented in Figure 1.

Region	Replications	Experimental Groups					Control Groups	
		1	2	3	4	5	Type 1	Type 2
Southeast (U. of S. Carolina)	Replication I English Speaking							
	Replication II							
Mid-South (Tulane Univ.)	Replication I English Speaking							
	Replication II							
Southwest (Univ. of Texas)	Replication I English Speaking							
	Replication II							

Fig. 1.--General Design for the Total Evaluation

As indicated previously, the five experimental groups would use the Buchanan program with various combinations of supplements, teacher training, and reinforcement. These combinations are listed in Figure 2.

Experimental Group	Supplement	Training	Reinforcement
Number One	Teacher Innovated	One-half day Orientation	No formal program
Number Two	Buchanan Supplement	One-half day Orientation	No formal program
Number Three	Swanson Supplement	One-half day Orientation	No formal program
Number Four	Swanson Supplement	One-half day Orientation plus two weeks training	No formal program
Number Five	Swanson Supplement	One-half day Orientation plus three weeks training	Reinstein Reinforcement

Fig. 2.--Treatment Combinations to be Administered Experimental Groups in Each of Three Participating Regions

In order to test the effects of the several variables on a sample of Head Start children, the investigators found it necessary to purchase and/or construct the materials, arrange a program of teacher training, test the sample subjects before and after exposure to the instructional programs, and carefully monitor the classes during the year to determine that the various programs were being implemented appropriately.

With respect to the three control groups (Figure 1) in each region, these would not use the Buchanan program, but two of the three (Type 1) would be monitored as would each of the experimental groups. Control Group Type 2 in each region would not be monitored. This arrangement would allow the investigators to assess the effect that the periodic appearance of the monitor would have on the classes.

Inasmuch as each treatment was administered to two classes in each region, the three Evaluation and Research Centers replicated the evaluation both within their own regions and across regions. Obviously, it was important that classes be as homogeneous as possible across experimental and control groups in order to assume equality of groups. But at the same time, it was desirable that heterogeneity exist between the classes in each treatment (but not across treatments) for the purpose of observing any interaction or reversal effects. In view of the fact that the intervention program was a language development program, it seemed important that the two replications within each region differ with respect to the language or dialect of the subjects. That is, replication I in each region would be English-speaking subjects, but it seemed appropriate to perform replication II in each region with subjects of another language or dialect if at all possible.

Instrumentation

The instruments required to collect the data for the evaluation fell into three general categories. First, there were those instruments selected on the national level and representing a common core of measurements which would be administered to all subjects in all regions participating in the evaluation. These instruments included those to be administered before the subjects' Head Start experiences and again afterward, as well as a group of "middle" measures to be administered between the pretesting and posttesting. Other instruments stipulated by the national guidelines were designed to solicit data related to biographic factors of children and staff members,

data related to the instructional programs, data related to the degree of parent participation, and other relevant data (see Appendix C for a full listing of those instruments required for use by all Evaluation and Research Centers).

The second category of instruments to be used in the investigation were those selected by the present investigators to assess the influence of the experimental language development programs. These instruments would be administered before and after the language instructional program. The first of these was the Metropolitan Readiness Tests. This series of tests is considered by many to be one of the best available for measuring general readiness. Included in the Metropolitan are items assessing mathematical readiness as well as reading readiness. The second instrument selected in this category was the Gates-MacGinitie Reading Tests - Reading Skills. The Gates-MacGinitie is oriented toward reading readiness and thus provided another measure of language and reading development. The final test selected for the language program evaluation was the Illinois Test of Psycholinguistic Abilities (Revised Edition). This test concentrates on language ability and is the only one of its kind that appears to have satisfactory standardization data.

The third category of instruments used in the evaluation were those developed by the University of South Carolina Evaluation and Research Center specifically for the quality control of the instructional programs (experimental and control treatments) and the collection of test data in the field. One of these was the Head Start

Intervention Check List (see Appendix D), and it was used by field monitors to report weekly on the performance of those teachers participating in the evaluation. The data obtained with the instrument were utilized by the Evaluation and Research Center staff to make field corrections and to maintain a continuous record of each teacher's performance with each experimental language program including two of the three control groups.

Two other instruments were utilized to maintain a high level of quality in the collection of data related to seven of the national evaluation instruments[2] and the three language development and achievement tests.[3] One of these, the Examiner Evaluation Form (Appendix E) was used by full-time quality control persons to evaluate the performance of data collectors. Information obtained through the use of the instrument was utilized to make corrections in testing practices as they were observed.

The other instrument developed at the University of South Carolina to control the quality of data being collected in the field was the Report of Testing Conditions (see Appendix F). This form was used to continually assess the conditions under which the testing of sample subjects was performed. Through use of this

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[2]These tests were: Stanford-Binet, (long form); Birch Response Style; Inventory of Factors Affecting the Stanford-Binet; Gumpgookies; WPPSI-Animal House; Revised Pre-School Inventory; Play Situation-Picture Board Sociometric Technique.

[3]These tests were: Revised Illinois Test of Psycholinguistic Abilities; Metropolitan Readiness Test; and Gates-MacGinitie Reading Tests-Reading Skills.

instrument, reports were filed with the Evaluation and Research Center on the conditions under which various tests were administered.

Sample Selection

The selection of Head Start Centers, classes, and children to be included in the evaluation was based on two groups of criteria. First, the sample had to meet national sample requirements. These stipulations included the following:

1. There must be 120 sample eligible children in the design (of each region) at the end of posttesting.
2. The sample children must have had no previous Head Start experience.
3. The sample children must be between the ages of three and one-half to four and one-half, or four and one-half to five and one-half years of age.
4. At least sixty-five percent of each class must be sample eligible.

In addition to the national requirements listed above, additional criteria for the sample were necessitated by the design of the evaluation as previously described. These included:

1. At least two different Head Start Centers must be utilized in the evaluation, preferably in two different states. Further, each center must have at least six classes which should qualify as sample eligible.
2. Classes within centers must be separated geographically to the extent that treatment "leakage" would be minimized among experimental and control classes.
3. Teachers in the participating centers must volunteer to attend a two to three week training session in the use of the programs at the University of South Carolina.
4. Center administrative personnel must be willing to cooperate extensively in the evaluation.

Operational Hypothesis and Auxiliary Questions

The operational hypothesis to be tested in the evaluation was formulated as follows:

> The language achievement of the experimental and control classes participating in the evaluation will support a ranking in effectiveness of the treatment methods (Fig. 1 and Fig. 2) of the following order (most effective to least effective): Group 5, Group 4, Group 3, Group 2, Group 1, Control Groups 1 and 2.

In addition to the specific operational hypothesis stated above, the following questions were to be considered as sample and data permitted:

1. Will Head Start classes in one region score significantly higher on the average on any of the tests administered than children in another region?

2. Will classes in which the children speak a language or dialect other than English differ significantly on any of the pretests from those classes in which English is spoken by the children?

3. Will the two control groups perform differently on any of the tests administered (monitor versus non-monitor effect)?

4. Will there be significant interaction between replications and treatments (inconsistency of treatments across replications) in cases where the second replication of a region is comprised of children speaking languages or dialects different from English?

5. Will the effectiveness of the treatments differ as a function of the age of the children in the various classes?

PART FOUR

EVALUATION PROCEDURES

Programs and Supplements

An initial task in the implementation of the evaluation was the completion of the Swanson Supplement and the Reinstein Reinforcement Program. Major elements of the Swanson Supplement had been developed and field tested prior to the summer of 1968, but the work of constructing supplemental units to correspond to each of the Buchanan lessons and of packaging these had to be completed during the summer and early fall of 1968. The Reinstein Program, although less time-consuming in its development, also had to be completed before teacher training could begin.

Sample Selection

Simultaneous with the development of the instructional supplements and materials was the selection of the sample centers, teachers, and children to be included in the evaluation. The University of South Carolina Center began the selection process by sending questionnaires with cover letters (see Appendix G) to all full year Head Start programs in Virginia, North Carolina, South Carolina, Georgia, and Florida. The questionnaire was designed to obtain data which would indicate which of the centers would meet the sampling criteria (see page 12). The cover letter

which accompanied the questionnaire gave the center directors the general form of the evaluation and requested them to indicate whether or not they would participate if selected.

Although many centers responded and stated their eagerness to participate, only one center met all criteria. That center was the Henderson (North Carolina) Full-Year Head Start Program.

Another center, in Vero Beach, Florida, met all criteria except that one of the six classes had only seven sample-eligible children. Permission was requested of Dr. Lois-ellin Datta to use Vero Beach as the second sample center with this limitation. Permission was granted, and Henderson and Vero Beach officially were selected as the 1968-69 sample centers. At the time the centers were selected, a total of 185 children were available for inclusion in the evaluation. One hundred and five of these were enrolled in seven classes at Henderson and eighty were enrolled in six classes at Vero Beach. Five classes in each location were selected as experimental classes; two of the classes at Henderson and one at Vero Beach were selected as control classes.

Inasmuch as the evaluation was intended to assess the effectiveness of programs in language development, replication 1 in each region would be English-speaking subjects. To be certain a dialect was not present which might contaminate the findings, an investigation was done at the Henderson, North Carolina center. Dr. Arthur I. Weiss, Head of the Speech Pathology and Audiology Program at the University of South Carolina, concluded that eighteen of the twenty-two children tested had "mild-to-strong" Southern Negro

Dialects but that the dialect would not interfere with the administration of various types of psychological and cognitive tests. (See Appendix H.) In neither location did the language or dialect of the subjects differ from standard English to the extent that they could be considered as "non-English" in the second replication. Therefore, language difference was not a variable in the Southeast replications.

Teacher Training

The evaluation design required that all teachers of experimental classes undergo a one-half day orientation period with the Buchanan program. The design further required that teachers in experimental groups four and five and all monitors receive an intensive training program in the use of the materials and techniques to which they were assigned. In the case of teachers of experimental groups one, two, and three, the orientation sessions were carried out by each of the regional Evaluation and Research Centers independently. But the training of teachers for experimental groups four and five and the monitors was done at the University of South Carolina for all three regions.

Teacher training began at the University of South Carolina on the morning of October 7, 1968, and continued through October 25. During the week of October 7, the training staff emphasized the Buchanan program; the week of October 14, teachers were trained in the use of the Swanson Supplement. In the final week of training, teachers of experimental group five and the monitors received instruction in the use of the Reinstein Reinforcement Program.

After the first day of orientation, the format for the training session was one of class study and immediate application of the methods in field situations (see Schedule of Daily Events, Appendix I). Teachers were assigned to one of four training groups for practice in two local Head Start Centers. Each of the Centers made two classes available for training purposes, thus making it possible for each of the trainees to teach once every other day.

Each teaching session was approximately one-half hour in length. The trainee teacher was responsible on each occasion for presenting one complete lesson to a class of Head Start children. Trainees who were not teaching at the time and the monitors were observers in the classroom during the lesson.

Following each teaching session (three were scheduled each day), an evaluation session was held with each group under the direction of the University of South Carolina Center training staff. This session was designed to allow immediate remediation of improper techniques or handling of materials as well as to permit positive reinforcement of effective practice.

Initially, teachers were directed to follow manuals very closely. As they became increasingly familiar with the materials, they were encouraged to individualize their teaching as much as possible while adhering to the basic objectives and content of the programs. During the final week of training, the monitors were given the Intervention Check List (see Appendix D) and trained in its use. The monitors then used the instrument under supervision in the field training sessions.

A total of twenty-two teachers and eight monitors were trained at the University of South Carolina. A smaller number actually participated in the evaluation, but it was necessary to "overtrain" in order to insure the final selection of highly competent teachers for participation in the evaluation and to provide against teacher attrition during the year.

Pretesting

The Evaluation and Research Center for Project Head Start at the University of South Carolina began pretesting in its region for the 1968-69 evaluation on September 25, 1968. One hundred and six children in the Henderson Center and seventy-six children in the Vero Beach Center formed an initial sample of one hundred and eighty-two subjects eligible for testing.

Except for sociometric measures, all pretests had been completed by October 22, 1968. One hundred and seventy-nine subjects had been administered the Stanford-Binet, the Birch Response Style, and the Inventory of Factors Affecting the Stanford-Binet. The Gumpgookies, the Wechsler Preschool and Primary Scale of Intelligence (Animal House section), and the Revised Preschool Inventory had been administered to 178 subjects. The Revised Illinois Test of Psycholinguistic Abilities, the Metropolitan Readiness Tests, and the Gates-MacGinitie Reading Tests had been given respectively to 177, 176, and 170 children. The sociometric measures were completed in the Henderson Center on November 26 and in Vero Beach on December 12.

Implementation of the Intervention Procedures

The language development intervention program was made operational in the region of the University of South Carolina during the month of November, 1968. The experimental language programs began on November 12 in Henderson, North Carolina; and the children in Vero Beach, Florida, began the experimental programs on November 18.

The general problems encountered in the implementation of the program were related to the packaging and shipping of materials from suppliers to the University of South Carolina and from there to the various classes in the three regions. Shipment quickly became smooth, and the task of transporting the considerable volume of material from the offices of the University of South Carolina to classes in five states grew relatively routine.

Interim Observations and Related Instruments

The administration of the interim measures, the Observation of Substantive Curricular Input and the Post Observation Inventory, took place during the months of November, January, February, March and April. During October and November, Class Registers, Parent Consent Forms, and the Class Facilities and Resources Inventories were completed. Subsequently (by February, 1969), the Child Master Data Form, the Teaching Staff Characteristics, and Staff Member Information instruments were completed.

Posttesting

Posttesting began on May 19 in Henderson and was completed on June 5. In Vero Beach, posttesting began on June 9 and was completed

on July 11, 1969. Teachers in both areas were informed in advance of the testing schedule and space requirements. Posttesting proceeded smoothly. These tests included seven of the national evaluation instruments[4] and the three language development and achievement tests.[5]

Quality Control

The procedures designed and implemented by the Evaluation and Research Center at the University of South Carolina to insure the quality of the evaluation data may be considered in three separate categories. First, there are those procedures designed to insure that the data collection procedures were valid. All individuals administering tests for the Center were required to meet certain criteria established by the quality control division of the staff. These criteria were based upon an individual's ability to relate to children, to master testing procedures and materials, and to make sound judgments in administering and scoring tests. Examiners administering individual tests, whatever their previous experience, were trained to these criteria by staff members thoroughly familiar with the tests and individual testing techniques. Examiners were then observed by the quality control staff on each test the examiner was to administer. Examiners had to be passed as competent by a

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[4] Stanford-Binet (long form); Birch Response Style; Inventory of Factors Affecting the Stanford-Binet; Gumpgookies; WPPSI-Animal House; Revised Preschool Inventory; Play Situation--Picture Board Sociometric Technique.

[5] Revised Illinois Test of Psycholinguistic Abilities; Metropolitan Readiness Test; and Gates-MacGinitie Reading Tests--Reading Skills.

unanimous vote of the quality control division staff. Examiners with limited experience who were passed by quality control were observed by a clinical psychology American Psychological Association diplomate for final certification.

Any examiner not passed by quality control was either dismissed or given remedial training depending upon the type and extent of her deficiencies. Tests administered for the purpose of obtaining estimates of intelligence were given only by examiners with extensive experience. The testing performance of examiners and scoring procedures were observed in the field approximately once every two weeks by quality control staff members. Provisions were made for examiners to be brought in from the field for remedial training when necessary.

During quality control observations, a rating form (see Appendix E) was used to evaluate examiners. Examiners had to receive a grade of B or higher on items 1 through 6 and an A on item 7 in order to continue gathering data. In addition, the conditions under which the tests were administered are systematically controlled. Quality control personnel utilized the Report on Testing Conditions (see Appendix F) to monitor these situations when they were observing testers in the field as described above.

The second category of quality control procedures were those designed to insure that the intervention techniques, that is, the various experimental and control treatments, were being conducted in the field as specified. (See Evaluation Design section for description of package programs.) Monitors were trained in the intervention procedures at the same time that the teachers of the

experimental group were trained. In addition, they were trained to use a monitoring instrument (see Appendix D) to report instructional procedures being carried out in classes.

The Center at the University of South Carolina had one monitor in the Vero Beach area and one in Henderson. Each of these monitors visited each class in her area (control and experiment) once every six days. The order in which the classes were visited was randomized (by the Evaluation and Research Center) for each six-day period so that the teachers might not predict the day of the visit of the monitor. Monitors discussed instructional practices which they had observed with the teacher in the experimental groups after each lesson and offered suggestions for adhering as closely as possible to the stipulated program. When a monitor visited a classroom, she remained during the entire sequence of intervention procedures. The monitor checklist was completed at the end of each observation. Each Friday the monitors mailed the completed checklists to the Center Director, and these were reviewed by the Center staff once each week for irregularities. A direct line of communication between the Center and the monitors was maintained. If further action was required, Dr. George H. Lackey, Jr. was consulted. He supervised quality control for intervention monitoring at the University of South Carolina. Any questions relative to monitors and their duties were directed to Dr. Lackey. The monitors themselves were observed in the field approximately once per month by a Center staff member to insure that they were performing their functions as specified. At times, the Center member monitored a class simultaneously with the monitor. Comparisons were made of the Intervention Check List following the class meeting.

The final category of Quality Control procedures were those related to the processing of data. These included a check of the adequacy of the data, such as a missing name or identification number, and the accuracy of scoring and of recording the data. Although these procedures may appear to be more related to office routine than to the evaluation, they were a vital aspect of the data quality control system.

As the evaluation data arrived, they were checked by locally stationed examiners with some aid from temporary personnel. All data were run through two main procedures: (a) the data identification check which was executed by temporary employees and Junior Research Assistants; and (b) the data check for scoring and recording which was done by the field examiners.

Upon entering the Evaluation and Research Center, the data were first subjected to the data identification check. While no record was made of identification information errors, the errors were corrected as they were found. The first procedure in the data identification was the checking of every record booklet or answer sheet and the accompanying Digitek coding sheet for the following CORRECT identification information: (1) subject name; (2) subject number; (3) date of test administration; (4) beginning time of test administration; (5) ending time of test administration; (6) total testing time; (7) tester identification number; and (8) sample identification.

After the record booklets and coding sheets were checked, every coding sheet was checked for agreement of correct information with that which had been recorded on the booklet for each particular

administration. The necessary information for each coding sheet was: (1) subject number; (2) card number; and (3) tester number.

A second general data processing procedure, the data check for scoring and recording, went into operation after the data identification check had been completed. At that time, every fifth test or answer sheet and accompanying Digitek coding sheet for each test was checked for correct record booklet SCORING AND RECORDING of information onto the coding sheets, item by item.

In the case of an examiner being assigned the task of checking the data for scoring and recording of a particular group of tests for which the fifth test happened to be the one she had administered herself, she went to the fourth or sixth sequence of papers, or until there was one she had not administered, and continued with the every-fifth sequence in all other cases.

All data were filed by test within the quality control data check division. The every-fifth test, or fourth or sixth as mentioned above, was pulled from the group and was marked with a "Q" in red in the upper left-hand corner of the front of the record booklet and on the back of all of the accompanying coding sheets in the upper right-hand corner. Examiners checked the record booklets and coding sheets as if they had never been scored or recorded, item by item. All corrections were made by the testers as they found errors in the scoring and recording. When a tester completed the data check procedures for scoring and recording of all test administrations of an individual test, she gave to quality control all the Quality Control Data Check Records in subject order stapled to a file.

The Quality Control Data Check Record was designed for use in connection with scoring and recording errors. The form is self-explanatory and had to be completed in detail on each test administration, including record booklet and accompanying coding sheets, on which was found ANY error of a scoring or recording nature. This form has been reproduced below.

QUALITY CONTROL DATA CHECK RECORD

Sample _____ Subject Number _____

Subject Name _____

Test _____

Date of Administration _____ Tester Number _____

No. of Scoring Errors _____ No. of Recording Errors _____

Comments (Specify Nature of Each Scoring Error) _____

_____

_____

Additional Comments: _____

_____

Checker No. _____ Date _____

After the quality control staff reviewed and was satisfied with the Quality Control Data Check Records submitted by the individual examiners for individual test groups, it advised data analysis that the particular test groups were ready to go to data analysis. From there the data went through procedures appropriate for preparing them for the computer center.

In February, 1969, Dr. Gertrude Justison made the following observations, following her visit to the Evaluation and Research Center at the University of South Carolina:

"...are four general impressions which are worthy of note, if not commendation.

"1/ The degree of systematic quality control [is] evident in all research activities from training to data collection and analysis.

"2/ The organization and efficiency of materials production operations and distribution within rather serious time pressures and space limitations.... [is worthy of note.]

"3/ The easy but responsible communication between staff and the careful ordered nature of articulation between separate but related functions in the overall research effort.... [is worthy of note.]

"4/ The systematic, detailed recording procedures, is an example."

Administrative Problems and Solutions

At the outset of the project, a problem developed with reference to the mode of shipping materials to the centers. When shipped by truck or train to Vero Beach, materials would sit in a warehouse miles from their destination while Vero Beach personnel would patiently await their delivery. It became necessary to air freight all materials to Vero Beach and send them a copy of the bill of lading so they could make inquiries if the materials did

not arrive when expected. With this method, few further problems were encountered.

In late January, 1969, it was learned that funding for the Henderson region was such that classes would be unable to operate past the end of April. The intervention program and posttesting required that classes continue open through the month of May. Through communications between Dr. Lois-ellin Datta of the Office of Economic Opportunity, additional funds were provided through Head Start to keep classes operating through May.

In the spring of 1969, the Regional Training Office located at Florida State University, Tallahassee, selected two Head Start teachers from Vero Beach to attend an eight-week Leadership Training Course, not realizing they were a part of a research project. Communications were improved, resulting in a meeting with the Regional Training officers and representatives from the Evaluation and Research Center in late March. Objectives of the intervention program, along with details of the total project, were described. Among those attending were Dr. Tricia Godshall of the University of Miami, Director of the Regional Training Office in South Florida; Mrs. Georgia Henry, and Mrs. Carol Seefeldt, Regional Training officer from Florida State University. This meeting alleviated further misunderstanding.

PART FIVE

ANALYSIS OF THE DATA

Introduction

The purpose of the present evaluation was to assess the influence of five language development programs on the learning of children in year-round Head Start programs. The general rationale and design of the investigation, including program variables and definition of experimental and control classes, have been presented in Part Three. The overall operational hypothesis to be tested in the evaluation was stipulated on page 13 and is repeated here for the convenience of the reader:

> The language achievement of the experimental and control classes participating in the evaluation will support a ranking in effectiveness of the treatment methods of the following order (most effective to least effective): Group 5, Group 4, Group 3, Group 2, Group 1, Control Groups 1 and 2.

As reported earlier, three instruments were selected to measure the effectiveness of the experimental language programs. These three were the Metropolitan Readiness Tests, the Gates-MacGinitie Reading Tests - Reading Skills, and the Illinois Test of Psycholinguistic Abilities (Revised Edition). The results obtained in testing the hypothesis through the use of the three instruments are reported individually after a description of the sample in terms of race, sex, chronological age, mental age, I.Q., and a statement of the general analytic strategy.

The Sample

The evaluation was conducted in Henderson, North Carolina, and in Vero Beach, Florida. Each of the five experimental programs was used in each location, the only difference being that Henderson had a second control group that was not monitored. Descriptive information on race, sex, chronological age, mental age, and I.Q. for the experimental and control groups in each location, both before and after the language development programs had been administered, are presented in Tables 1 and 2.

The reader will note that in Henderson the sample was composed almost entirely of Negro children. In Vero Beach, more than two-thirds of the children were Negro, the others being white. Girls outnumbered boys in both locations. Although there were initial differences in mean I.Q. for the two Head Start Centers, measures taken after the intervention program reveal mean I.Q.'s to be very similar. Also, the mean chronological ages of the two groups are very nearly the same. Only students who were available for both pretesting and posttesting were included in the evaluation. Attrition, however, was slight.

General Strategy of the Analysis

As indicated earlier, the three tests of language development used to measure the effectiveness of the intervention programs were administered prior to intervention and after intervention. The general strategy for the evaluation analysis consisted of analysis of variance procedures performed on the data obtained from the post administration of the three tests. The pre-test

TABLE 1

Race, Sex, Chronological Age, Mental Age, and I.Q.
Data for Experimental and Control Groups
Prior to Language Development Programs

Experimental Groups	Race		Sex		Total	Mean Chronological Age (Months)	Mean Mental Age (Months)	Mean I.Q.
	N	W	M	F				
Treatment #1 Henderson	15	0	8	7	15	62.40	51.27	80.87
Treatment #1 Vero Beach	11	3	6	8	14	61.43	53.86	85.50
Treatment #2 Henderson	14	0	7	7	14	61.43	51.36	81.86
Treatment #2 Vero Beach	9	4	7	6	13	62.00	53.77	86.15
Treatment #3 Henderson	14	0	3	11	14	62.14	50.79	78.64
Treatment #3 Vero Beach	10	4	4	10	14	61.64	54.71	87.57
Treatment #4 Henderson	15	0	10	5	15	63.27	50.60	77.60
Treatment #4 Vero Beach	14	1	8	7	15	63.53	56.13	87.20
Treatment #5 Henderson	13	1	6	8	14	63.43	56.57	87.79
Treatment #5 Vero Beach	6	7	5	8	13	62.85	54.31	84.69
Monitored Control Henderson	16	0	5	11	16	63.00	54.63	84.25
Monitored Control Vero Beach	3	4	2	5	7	63.00	52.43	83.14
Unmonitored Control Henderson	15	0	9	6	15	63.93	52.40	80.00
Totals Henderson	102	1	48	55	103	62.82	52.52	81.56
Totals Vero Beach	53	23	32	44	76	62.37	54.39	85.97

TABLE 2

Race, Sex, Chronological Age, Mental Age, and I.Q.
Data for Experimental and Control Groups
After Language Development Programs

Experimental Groups	Race		Sex		Total	Mean Chronolcgical Age (Months)	Mean Mental Age (Months)	Mean I.Q.
	N	W	M	F				
Treatment #1 Henderson	14	0	7	7	14	70.86	63.64	88.86
Treatment #1 Vero Beach	9	2	6	5	11	70.00	64.91	92.64
Treatment #2 Henderson	15	0	7	8*	15	69.00	64.60	93.11
Treatment #2 Vero Beach	9	2	5	6	11	69.64	62.18	87.91
Treatment #3 Henderson	14	0	3	11	14	69.64	62.29	88.36
Treatment #3 Vero Beach	10	4	4	10	14	70.00	66.93	95.43
Treatment #4 Henderson	13	0	8	5	13	71.54	63.23	87.15
Treatment #4 Vero Beach	11	1	6	6	12	72.67	64.42	87.58
Treatment #5 Henderson	13	1	6	8	14	71.36	65.50	90.93
Treatment #5 Vero Beach	6	5	4	7	11	71.64	66.64	92.18
Monitored Control Henderson	15	0	5	10	15	70.80	65.93	92.53
Monitored Control Vero Beach	3	3	2	4	6	71.17	59.33	81.17
Unmonitored Control Henderson	15	0	9	6	15	71.73	63.73	88.87
Totals Henderson	99	1	45	55	100	70.69	64.16	90.05
Totals Vero Beach	48	17	27	38	65	70.82	64.57	90.37

*One subject was not available for pretesting and, therefore, was not included in analysis.

scores on the language tests, as well as I.Q. and age, were presumed to be potential covariates in cases where analysis of the pretest data suggested that an analysis of covariance of posttest data might be useful. In other words, an analysis of variance of pretest scores would be performed prior to the analysis of the posttest data. If the analysis established the equivalence of groups before treatments were applied, then analysis of variance alone would be performed on posttest data. If, on the other hand, evidence of initial non-equivalence of groups appeared, consideration would be given to following the analysis of variance of posttest data with an anslysis of covariance.

This sequence was considered advantageous because of the additional assumptions required for utilization of the analysis of covariance. (Elashoff has recently restated in a particularly readable form for educators the assumptions associated with the use of the analysis of covariance.[6]) In cases where there is little reason to believe that the gains in precision would be substantial through the use of analysis of covariance, it appears wise to depend on the analysis of variance procedures in making inferences regarding treatment differences.

As each of the three tests consisted of several subtests, the means obtained from the tests were compared initially by a multivariate test of significant differences. Subsidiary univariate

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[6]Janet Elashoff, "Analysis of Covariance: A Delicate Instrument, "American Educational Research Journal, Vol. VI, 1969, pp. 383-401.

tests were performed when indicated by the multivariate test. In configuration, the designs for the Metropolitan Readiness Tests data and the Gates-MacGinities Reading Tests data were three way: treatments x replications x mode of test administration. Mode of test administration was a factor introduced in the posttesting situation where each treatment group was divided and one half administered the test individually and the other half administered the test in groups as stiuplated by the publishers.[7] The Illinois Test of Psycholinguistic Abilities was administered to all children individually, and the analysis of the data obtained from it was therefore a two way design: treatments x replications.

Throughout the analysis the unmonitored control group at Henderson (the "extra" or thirteenth group) was deleted from the general analysis in order that the designs be balanced with respect to treatments. Possible differences between monitored versus unmonitored groups were tested in auxiliary analyses.

The computer program used for the majority of the analyses was the MANOVA of the Biometric Laboratory, University of Miami. Certain analyses of covariance were performed using the Miami ANCOVA program. Pairwise comparisons were obtained through the use of Winer's suggested modification of Tukey's test (HSD)[8].

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[7]The present investigators were interested in whether differential performance would be observed. Future data gathering costs could be reduced if the data supported the null hypothesis.

[8]B. J. Winer, Statistical Principles in Experimental Design (New York: McGraw-Hill, 1962), pp. 101-103.

Metropolitan Readiness Tests

The data obtained from the initial administration of the Metropolitan Readiness Tests are summarized by groups and subtests in Table 3 for Henderson and in Table 4 for Vero Beach. Consistent with the general strategy outlined in the preceding section, these data were subjected to a multivariate analysis of variance. A groups x replication interaction was observed; $F = 2.34$ with 30 and 450 degrees of freedom, significant above the .001 level. A difference in replications also was observed but this could have been expected and was not an issue at this point in the analysis.

Examinations of the discriminant weights and univariate F tests suggested that the observed groups x replication interaction was due chiefly to differential performance on the third sub-test of the Metropolitan Readiness Tests, Matching. The reader will note that Experimental Group 1 in Henderson (Table 3) and Experimental Group 3 in Vero Beach (Table 4) performed very poorly on this subtest when compared to the other classes in the evaluation.

In general the results of the analysis of variance confirmed the hypothesis that the groups at Henderson were very much alike, as were those at Vero Beach, in their initial performance on the Metropolitan Readiness Tests. There were, however, differences between the replications.

The first step in the analysis of the posttest scores was a multivariate analysis of variance: groups x replications x mode of test administration (individual or group). The cell means of these scores are presented in Table 5 for Henderson and Table 6 for Vero Beach.

TABLE 3

Initial Metropolitan Readiness Tests Data by Subtests for Groups in Henderson Replication

Subtest	Experimental Groups					Control Groups		Means	Standard Deviation
	1	2	3	4	5	Monitored	Unmonitored		
Met. 1 (Word Meaning)	6.53 N=15	4.93 N=14	5.50 N=14	5.43 N=14	5.36 N=14	5.00 N=16	5.13 N=15	5.41	1.77
Met. 2 (Listening)	8.00 N=15	8.72 N=14	7.57 N=14	8.57 N=14	8.36 N=14	8.63 N=16	8.73 N=15	8.37	1.93
Met. 3 (Matching)	1.00 N=15	5.64 N=14	5.57 N=14	5.71 N=14	5.50 N=14	5.19 N=16	1.80 N=15	4.30	2.69
Met. 4 (Alphabet)	4.87 N=15	4.43 N=14	4.00 N=14	4.43 N=14	5.43 N=14	4.44 N=16	5.93 N=15	4.79	2.27
Met. 5 (Numbers)	7.00 N=15	6.29 N=14	6.57 N=14	5.57 N=14	6.50 N=14	6.31 N=16	6.27 N=15	6.36	1.99
Met. 6 (Copying)	0.40 N=15	0.71 N=14	0.71 N=14	0.64 N=14	1.14 N=14	0.62 N=16	1.53 N=15	0.82	1.25

Note: Inconsistencies in frequencies between the above table and Tables 1 and 2 occur because only children receiving both pretest and posttest were considered in the analysis.

TABLE 4

Initial Metropolitan Readiness Tests Data by Subtests for Groups in Vero Beach Replication

Subtest	Experimental Groups					Monitored Control Group	Means	Standard Deviation
	1	2	3	4	5			
Met. 1 (Word Meaning)	5.23 N=13	4.92 N=13	5.83 N=12	5.93 N=15	4.92 N=13	5.17 N=6	5.36	1.84
Met. 2 (Listening)	8.31 N=13	7.92 N=13	7.83 N=12	8.33 N=15	8.15 N=13	7.50 N=6	8.07	1.80
Met. 3 (Matching)	4.23 N=13	4.54 N=13	1.75 N=12	2.53 N=15	3.00 N=13	3.33 N=6	3.22	2.37
Met. 4 (Alphabet)	4.54 N=13	3.92 N=13	4.67 N=12	4.53 N=15	3.77 N=13	4.00 N=6	4.26	2.19
Met. 5 (Numbers)	7.08 N=13	6.23 N=13	5.75 N=12	7.13 N=15	6.54 N=13	6.83 N=6	6.60	2.03
Met. 6 (Copying)	0.31 N=13	0.85 N=13	0.25 N=12	0.40 N=15	0.00 N=13	0.17 N=6	0.34	0.99

Note: Inconsistencies in frequencies between the above table and Tables 1 and 2 occur because only children receiving both pretest and posttest were considered in the analysis.

TABLE 5

Means Per Cell of Metropolitan Readiness Tests Subtests Scores for Henderson Sample by Experimental and Control Groups and by Individual or Group Test Administrations

Subtest	Testing Method & Average	Experimental Groups					Control Group I (Monitored)
		1	2	3	4	5	
Met. 1 (Word Meaning)	I	4.43	4.89	6.43	5.20	6.17	6.30
	G	4.86	5.40	5.00	4.33	5.00	5.60
	Avg.	4.64	5.07	5.77	4.73	5.54	6.07
Met. 2 (Listening)	I	9.29	9.00	7.71	9.6[illegible]	8.17	10.10
	G	9.00	8.60	8.00	7.83	8.86	8.00
	Avg.	9.14	8.86	7.85	8.64	8.54	9.40
Met. 3 (Matching)	I	6.71	7.78	7.71	7.20	6.50	6.30
	G	5.59	7.60	7.50	8.17	7.00	7.00
	Avg.	6.14	7.71	7.62	7.73	6.77	6.53
Met. 4 (Alphabet)	I	11.29	13.67	13.43	11.40	13.33	6.30
	G	11.43	12.80	13.83	10.67	12.86	4.60
	Avg.	11.36	13.36	13.62	11.00	13.08	5.73
Met. 5 (Numbers)	I	7.57	8.22	8.00	8.00	6.67	8.80
	G	8.00	8.60	7.83	8.00	8.57	6.20
	Avg.	7.79	8.36	7.92	8.00	7.69	7.93
Met. 6 (Copying)	I	1.14	2.22	2.43	2.40	1.83	1.80
	G	2.57	1.40	1.67	1.83	2.86	3.20
	Avg.	1.86	1.93	2.08	2.09	2.39	2.27

TABLE 6

Means Per Cell of Metropolitan Readiness Tests Subtests Scores for Vero Beach Sample by Experimental and Control Groups and by Individual or Group Test Administrations

Subtest	Testing Method & Average	Experimental Groups					Control Group I (Monitored)
		1	2	3	4	5	
Met. 1 (Word Meaning)	I	5.40	7.00	4.50	6.17	5.20	6.50
	G	4.80	4.83	5.00	4.50	3.80	4.00
	Avg.	5.10	5.82	4.75	5.33	4.50	4.83
Met. 2 (Listening)	I	9.00	7.60	9.17	9.00	9.00	8.00
	G	10.00	9.83	8.83	8.17	8.00	8.75
	Avg.	9.50	8.82	9.00	8.58	8.50	8.50
Met. 3 (Matching)	I	6.00	5.60	6.67	6.83	5.40	9.50
	G	7.00	7.17	7.17	7.50	5.80	6.25
	Avg.	6.50	6.46	6.92	7.17	5.60	7.33
Met. 4 (Alphabet)	I	13.60	6.00	13.67	6.67	13.40	11.00
	G	13.20	7.00	13.00	9.83	9.60	5.25
	Avg.	13.40	6.55	13.33	8.25	11.50	7.17
Met. 5 (Numbers)	I	11.00	8.00	8.00	7.83	7.40	9.00
	G	7.60	7.50	7.67	7.17	7.80	5.75
	Avg.	9.30	7.73	7.83	7.50	7.60	6.83
Met. 6 (Copying)	I	2.60	0.60	1.33	0.67	2.40	1.50
	G	2.20	3.00	2.33	1.17	2.20	2.00
	Avg.	2.40	1.91	1.83	0.92	2.30	1.83

Inspection of the multivariate analysis results indicated a significant groups x replication interaction (F = 1.52 with 30 and 450 degrees of freedom, significant above the .041 level). Further analysis of this groups x replication interaction revealed that it was being caused by differential performance of the groups on the fourth subtest, Alphabet (F = 4.93 with 5 and 117 degrees of freedom, significant above .001 level). Apparently, the interaction observed was chiefly a reflection of the poor performance of the Vero Beach Experimental Group 2. The group means for this subtest are presented in Table 7 by experimental and control groups and by replications.

TABLE 7

Means for Metropolitan Readiness Tests, Subtest 4, Alphabet, by Experimental and Control Groups and by Replications

Experimental and Control Groups	Replications	
	Henderson	Vero Beach
Experimental Group 1	11.4	13.4
Experimental Group 2	13.4	6.5
Experimental Group 3	13.6	13.3
Experimental Group 4	11.0	8.3
Experimental Group 5	13.1	11.5
Control Group 1 (Monitored)	5.7	7.2

In addition to the significant groups x replication interaction effect, the multivariate analysis also indicated significant differences on this subtest (Alphabet) among groups in the two replications. Therefore, it was reasonable to consider the simple effects within each replication.

In the case of the Henderson replication, inclusion of the Control Group 2 (unmonitored) with a mean of 8.0 led to the following rank ordering of the groups at Henderson with respect to Subtest 4, Alphabet: the Control Group 1 (monitored) had a lower mean than all others except the Control Group 2 (unmonitored); the Control Group 2 (unmonitored) was not significantly different from Experimental Groups 2, 3, and 5. This rank ordering may be clarified somewhat with a diagram where a continuous line drawn under two or more groups indicates no significant difference in means. The relationships among the means of the seven groups in the Henderson replication are presented in this fashion below:

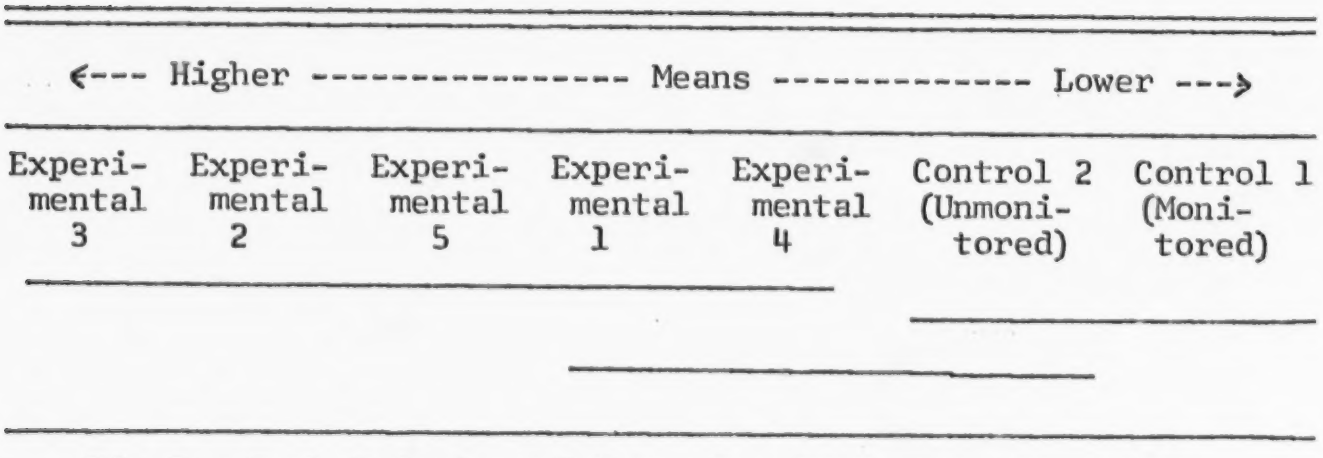

Fig.3.--Rank-Ordering of Means for Henderson Groups for Metropolitan Subtest 4, Alphabet.

Thus, it can be seen that Control Group 1 (monitored) is below all others except Control Group 2 (unmonitored), and the unmonitored control is below Experimental Groups 3, 2, and 5.

If the same type of diagram is used to present results from the Vero Beach replication, the reader will see that Control Group 1 and Experimental Groups 2 and 4 are significantly less than Experimental Groups 1 and 3 and Experimental Group 2 is also less than Experimental Group 5. See Figure 4 below.

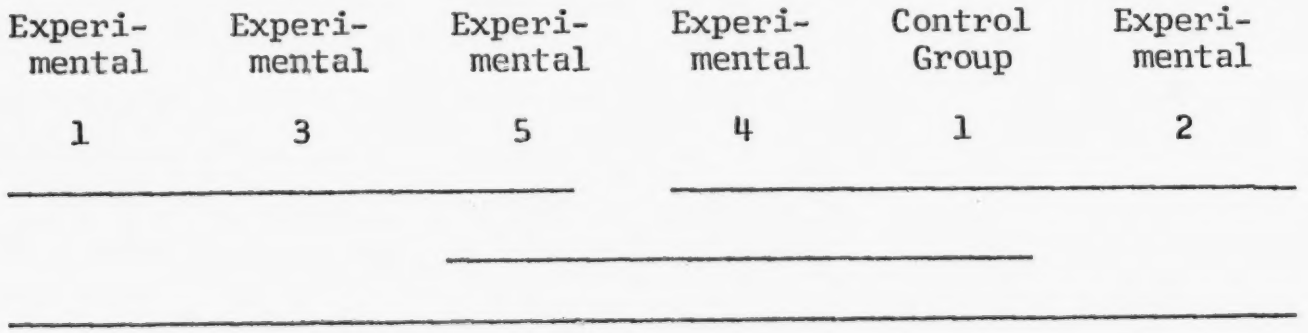

Fig. 4.--Rank-Ordering of Means for Vero Beach Groups for Metropolitan Subtest 4, Alphabet.

Subtest 4, Alphabet, was the only subtest of the Metropolitan on which significant differences in treatments were observed.

The multivariate analysis also revealed a significant difference in mode of test administration ($F = 2.31$ with 6 and 112 degrees of freedom, significant above .038). This effect was accounted for by the first Metropolitan subtest, Word Meaning. The univariate analysis of this variable revealed an F value of 7.68 with 1 and 117 degrees of freedom, significant above the .006 level.

In effect, the individually tested children consistently outperformed the group tested children on this first subtest of the Metropolitan. (See Table 8 for numbers of subjects receiving tests through individual or group administrations in each replication.) Inspection of the means indicated that this had happened with four of the six groups in the Henderson replication and with five of the six groups in the Vero Beach replication. One might speculate that the finding is reflective of some systematic effect that operates initially in the testing situation and tends to disappear for later subtests. The differences observed between the two replications on the pretest administration of the Metropolitan were not observed in the analysis of the posttest data.

TABLE 8

Numbers of Subjects Receiving Metropolitan Readiness Tests through Individual or Group Administration by Experimental or Control Groups and Replications

Experimental and Control Groups	Henderson		Vero Beach	
	Individual	Group	Individual	Group
Experimental 1	7	7	5	5
Experimental 2	9	5	5	6
Experimental 3	7	6	6	6
Experimental 4	5	6	6	6
Experimental 5	6	7	5	5
Control Group 1 (Monitored)	10	5	2	4
Control Group 2 (Unmonitored)	9	6		

At this point in the analysis, the decision was made to proceed with analysis of covariance procedures using various predictor sets. Therefore, the data obtained from the posttest administration of each of the Metropolitan Readiness Tests subtests were analyzed using first the corresponding pretest, then the corresponding pretest with pretest I.Q. scores, and finally the pretest, the I.Q., and the age of the subjects as covariates. The results of these analyses served only to verify those findings previously presented, namely: (1) with respect to Subtest 4, Alphabet, there was a significant groups x replication interaction; differences were found in the groups within replications but patterns were not discernible, and (2) individual testing proved to be superior to group testing in the case of the first Metropolitan subtest, Word Meaning.

The performance of the analysis of covariance did provide evidence, however, as to the usefullness of the procedure in the present circumstance. These items may be enumerated as follows:

1. The correlations between pretest and posttest performance of students on the first three subtests of the Metropolitan (Word Meaning, Listening, and Matching) were very small. Linear regression on the pretest data was not reasonable; these were of no practical use as predictors.

2. The pretest I.Q. proved to be a significant predicter, except in the case of Subtest 1, Word Meaning.

3. The age of subjects was of little or no value as a predictor.

4. In general, the precision gained through the use of the analysis of covariance was quite small.

No comparisons of the monitored and unmonitored control groups in the Henderson replications have been presented in the preceding analysis. The posttest means for each of the subtests for the two groups are presented with error terms and t values in Table 9 below. The reader will note that the two groups differed significantly on only Subtest 6, Copying.

TABLE 9

Comparisons of Henderson Monitored and Unmonitored Control Groups by Metropolitan Readiness Tests Subtests

Metropolitan Subtest	Control 1 (Monitored) (N = 15)	Control 2 (Unmonitored) (N = 15)	Mean Square Error	t Value
1 - Word Meaning	6.1	5.8	2.76	0.50
2 - Listening	9.4	8.5	4.39	1.18
3 - Matching	6.5	5.6	4.31	1.19
4 - Alphabet	5.7	8.0	12.28	-1.80
5 - Numbers	7.9	8.1	5.49	0.23
6 - Copying	2.3	3.7	3.54	2.04*

*Significant above the .05 level, two tailed test.

The Table of F ratios for the three way analysis of the Metropolitan subtest scores has not been presented in the text of the present report. These statistics for both the pretest and the posttest analyses are presented in Appendix J. Intercorrelations among subtests, for both pretest and posttest data, appear in Appendix K.

Gates-MacGinitie Reading Tests

The treatment of the data obtained through the two administrations of the Gates-MacGinitie Reading Tests-Reading Skills was performed in much the same manner as was the analysis of the Metropolitan data described in the preceding section. Again, the first step consisted of a multivariate analysis of the pretest scores for significant differences. The data obtained from the pretest administration are summarized by experimental and control groups and subtests in Table 10 for Henderson and in Table 11 for Vero Beach.

The only significant effect indicated by the multivariate analysis of the pretest scores was a difference in replications. Inspection of the groups across replications revealed that the difference was being caused by the Vero Beach students scoring significantly higher than the Henderson students on Subtest 1, Listening Comprehension; Subtest 2, Auditory Discrimination; and Subtest 3, Visual Discrimination. No significant differences among experimental and control groups within replications were found, however; and it was reasonable to conclude that an analysis of variance of posttest scores was appropriate. The means of these posttest scores by experimental and control groups and by subtests of the Gates-MacGinitie are presented in Table 12 for the Henderson replication and in Table 13 for the Vero Beach replication.

The multivariate analysis of the posttest scores indicated a difference in mode of test administration that approached significance ($F = 1.96$ with 8 and 105 degrees of freedom, significant above the

TABLE 10

Initial Gates-MacGinitie Reading Tests-Reading Skills Data
by Subtests for Groups in Henderson Replication

Subtest	Experimental Groups					Control Groups		Means	Standard Deviation
	1	2	3	4	5	Monitored	Unmonitored		
Gates 1 (Listening Comprehension)	8.86 N=14	8.00 N=13	8.00 N=13	9.43 N=14	9.14 N=14	8.75 N=16	9.07 N=15	8.77	2.23
Gates 2 (Auditory Discrimination)	11.00 N=14	11.15 N=13	10.15 N=13	10.14 N=14	11.43 N=14	11.00 N=16	10.33 N=15	10.75	2.28
Gates 3 (Visual Discrimination)	4.50 N=14	7.08 N=13	6.46 N=13	7.21 N=14	8.29 N=14	7.50 N=16	5.40 N=15	6.64	2.87
Gates 4 (Following Directions)	3.29 N=14	3.08 N=13	2.77 N=13	3.21 N=14	3.79 N=14	3.81 N=16	4.13 N=15	3.46	2.12
Gates 5 (Letter Recognition)	5.36 N=14	5.46 N=13	5.54 N=13	6.36 N=14	6.79 N=14	5.38 N=16	8.40 N=15	6.20	3.05
Gates 6 (Visual Motor Coordination)	4.29 N=14	3.00 N=13	4.39 N=13	2.64 N=14	4.43 N=14	4.88 N=16	6.60 N=15	4.36	3.86
Gates 7 (Auditory Blending)	5.00 N=14	6.23 N=13	4.85 N=13	5.43 N=14	5.57 N=14	5.75 N=16	4.67 N=15	5.35	2.03
Gates 8 (Word Recognition)	9.43 N=14	7.85 N=13	9.54 N=13	10.21 N=14	10.00 N=14	8.69 N=16	10.00 N=15	9.39	2.39

Note: Inconsistencies in frequencies between the above table and Tables 1 and 2 occur because only children receiving both pretest and posttest were considered in the analysis.

TABLE 11

Initial Gates-MacGinitie Reading Tests-Reading Skills Data
by Subtests for Groups in Vero Beach Replication

Subtest	Experimental Groups					Monitored Control Group	Means	Standard Deviation
	1	2	3	4	5			
Gates 1 (Listening Comprehension)	10.39 N=13	9.92 N=13	10.36 N=11	8.67 N=15	10.58 N=12	8.83 N=6	9.83	2.85
Gates 2 (Auditory Discrimination)	11.62 N=13	12.08 N=13	11.36 N=11	11.93 N=15	11.67 N=12	12.83 N=6	11.84	2.68
Gates 3 (Visual Discrimination)	6.15 N=13	6.54 N=13	7.91 N=11	6.27 N=15	7.17 N=12	6.67 N=6	6.74	1.91
Gates 4 (Following Directions)	5.00 N=13	3.92 N=13	4.27 N=11	5.07 N=15	5.33 N=12	4.67 N=6	4.73	2.16
Gates 5 (Letter Recognition)	4.31 N=13	5.00 N=13	6.00 N=11	5.60 N=15	4.75 N=12	4.83 N=6	5.10	2.25
Gates 6 (Visual Motor Coordination)	2.77 N=13	4.77 N=13	4.18 N=11	3.53 N=15	3.50 N=12	3.17 N=6	3.69	3.18
Gates 7 (Auditory Blending)	5.08 N=13	5.85 N=13	5.82 N=11	6.07 N=15	5.83 N=12	6.83 N=6	5.00	1.64
Gates 8 (Word Recognition)	8.62 N=13	8.62 N=13	9.46 N=11	9.53 N=15	8.83 N=12	8.83 N=6	9.00	

Note: Inconsistencies in frequencies between the above table and Tables 1 and 2 occur because only children receiving both pretest and posttest were considered in the analysis.

TABLE 12

Means Per Cell of Gates-MacGinitie Reading Tests - Reading Skills Subtests Scores for Henderson Sample by Experimental and Control Groups and by Individual or Group Test Administrations

Subtest	Testing Method & Average	Experimental Groups					Monitored Control Group
		1	2	3	4	5	
Gates 1 (Listening Compre.)	I	8.29	9.67	8.14	10.00	10.00	9.00
	G	6.00	7.29	7.40	7.67	8.29	7.17
	Avg.	7.08	8.39	7.83	8.73	9.08	8.27
Gates 2 (Auditory Discrim.)	I	13.57	14.50	14.29	15.40	16.83	12.67
	G	15.33	13.71	15.80	14.67	15.57	13.00
	Avg.	14.38	14.07	14.92	15.00	16.15	12.80
Gates 3 (Visual Discrim.)	I	9.71	10.50	10.00	9.20	13.83	8.44
	G	10.83	11.86	10.00	8.33	10.00	7.17
	Avg.	10.23	11.23	10.00	8.73	11.77	7.93
Gates 4 (Following Directions)	I	5.86	8.00	7.00	6.00	7.00	6.67
	G	6.17	5.00	5.20	6.17	7.14	5.83
	Avg.	6.00	6.38	6.25	6.09	7.08	6.33
Gates 5 (Letter Recognition)	I	12.43	15.50	13.86	14.00	13.67	6.33
	G	15.67	15.29	14.60	13.67	14.57	5.67
	Avg.	13.93	15.39	14.17	13.82	14.15	6.07
Gates 6 (Visual Motor Coordination)	I	7.29	8.83	10.29	7.00	12.83	7.33
	G	10.00	7.43	7.80	8.83	9.29	6.33
	Avg.	8.54	8.08	9.25	7.99	10.92	6.93
Gates 7 (Auditory Blending)	I	5.57	9.17	5.14	6.60	5.83	5.44
	G	4.50	5.71	7.20	5.50	6.14	4.33
	Avg.	5.08	7.31	5.99	6.00	5.99	4.99
Gates 8 (Word Recognition)	I	10.57	9.83	8.86	9.60	9.33	8.44
	G	10.67	11.57	6.80	9.17	9.14	8.17
	Avg.	10.62	10.77	8.00	9.37	9.23	8.33

TABLE 13

Means Per Cell of Gates-MacGinitie Reading Tests - Reading Skills Subtests Scores for Vero Beach Sample by Experimental and Control Groups and by Individual or Group Test Administrations

Subtest	Testing Method & Average	Experimental Groups					Monitored Control Group
		1	2	3	4	5	
Gates 1 (Listening Compre.)	I	10.60	8.50	9.50	9.33	11.25	11.50
	G	9.20	8.80	9.20	8.33	9.60	7.75
	Avg.	9.90	8.64	9.36	8.83	9.56	9.00
Gates 2 (Auditory Discrim.)	I	15.00	15.67	16.17	15.17	16.75	16.50
	G	13.40	13.40	15.60	14.50	17.20	13.75
	Avg.	14.20	14.64	15.91	14.84	17.00	14.67
Gates 3 (Visual Discrim.)	I	9.80	9.17	9.17	8.50	8.75	8.50
	G	7.40	9.40	9.60	8.33	8.40	8.75
	Avg.	8.60	9.27	9.37	8.42	8.56	8.67
Gates 4 (Following Directions)	I	6.80	6.00	7.17	5.83	6.75	6.50
	G	5.60	5.60	5.60	5.17	5.40	5.25
	Avg.	6.20	5.82	6.46	5.50	6.00	5.67
Gates 5 (Letter Recognition)	I	14.80	9.33	13.50	10.83	14.50	13.00
	G	14.00	8.40	13.80	11.67	12.00	5.75
	Avg.	14.40	8.91	13.64	11.25	13.11	8.17
Gates 6 (Visual Motor Coordination)	I	6.80	7.33	7.67	3.50	11.00	11.00
	G	9.20	6.40	10.60	5.83	8.60	8.00
	Avg.	8.00	6.91	9.00	4.67	9.67	9.00
Gates 7 (Auditory Blending)	I	7.00	7.00	9.00	6.00	4.50	10.50
	G	6.80	6.40	6.20	5.67	7.00	8.00
	Avg.	6.90	6.73	7.73	5.84	5.89	8.83
Gates 8 (Word Recognition)	I	9.80	7.83	8.83	10.33	7.00	10.00
	G	10.40	8.60	10.00	7.83	9.80	7.75
	Avg.	10.10	8.18	9.36	9.08	8.56	8.50

.059 level). As in the case of the Metropolitan data, the cause of this effect was found in the first subtest. Again, individually tested children systematically outperformed group tested children with the effect fading after the first subtest. The numbers of children receiving the test individually or in groups are presented by experimental and control groups and replications in Table 14.

The multivariate analysis also indicated significant differences among experimental and control groups in their performance on Subtest 2, Auditory Discrimination; Subtest 5, Letter Recognition; and Subtest 6, Visual Motor Coordination. The effects associated with Subtest 5 differed from those of Subtest 2 and Subtest 6 in that they suggested the possibility of a significant groups x replicate interaction. The multivariate analysis did not reveal this effect, but the univariate indicated an interaction that was significant above the .009 level. The multivariate test, of course, is used to minimize the probability of Type I error when performing a large number of tests at a given level of significance. Nevertheless, when a univariate result appears which may shed light on a situation, the investigator is obliged to examine simple effects. These were inspected in the present case, and the means for the groups in each replication are presented in Table 15.

From the table, it can be seen that the groups x replications interaction is probably being caused by the relatively poor performance of Vero Beach Experimental Group 2 on this subtest (Letter Recognition). This result was consistent with an interaction reported earlier in the analysis of the Metropolitan data. It is also not

TABLE 14

Numbers of Students Receiving Gates-MacGinitie Reading Tests - Reading Skills through Individual or Group Administration by Experimental and Control Groups and by Replications

Experimental and Control Groups	Henderson		Vero Beach	
	Individual	Group	Individual	Group
Experimental 1	7	6	5	5
Experimental 2	6	7	6	5
Experimental 3	7	5	6	5
Experimental 4	5	6	6	6
Experimental 5	6	7	4	5
Control 1 (Monitored)	9	6	2	4
Control 2 (Unmonitored)	8	7		

TABLE 15

Gates-MacGinitie Subtest 5, Letter Recognition, Means of Experimental and Control Groups by Replications

Experimental and Control Groups	Henderson	Vero Beach
Experimental 1	13.9	14.4
Experimental 2	15.4	8.9
Experimental 3	14.2	13.6
Experimental 4	13.8	11.3
Experimental 5	14.2	13.1
Control 1	6.1	8.2

surprising inasmuch as the Metropolitan Subtest 4 (where that interaction occurred) is Alphabet and the Gates-MacGinitie Subtest 5 is Letter Recognition. Vero Beach Experimental Group 2 simply was weak in this area and this is reflected in the two interactions.

At this point, experimental and control groups were considered in each replication separately for significant differences. The Henderson Control Group 1 (monitored) was found to be significantly lower than all experimental groups, and Control Group 2 (unmonitored). There were no other significant differences among groups. See Figure 5 below.

←---- Higher ---------- Means ---------- Lower ----→						
Experimental 2	Experimental 3	Experimental 5	Experimental 1	Experimental 4	Control 2	Control 1

Fig. 5.--Rank-Ordering of Means for Henderson Groups on Gates-MacGinitie Subtest 5, Letter Recognition.

In the Vero Beach replication, Control Group 1 (monitored) scored significantly below Experimental Groups 1 and 3, and Experimental Groups 2, 4 and 5 were significantly below Experimental Group 1. See Figure 6 below.

←---- Higher ---------- Means ---------- Lower ----→					
Experimental 1	Experimental 3	Experimental 5	Experimental 4	Experimental 2	Control 1

Fig. 6.--Rank-Ordering of Means for Vero Beach Groups on Gates-MacGinitie Subtest 5, Letter Recognition.

As noted earlier, the multivariate analysis also indicated significant differences among experimental and control groups on Subtest 2, Auditory Discrimination and on Subtest 6, Visual Motor Coordination. In the former case, that of Subtest 2, pairwise comparisons were performed again using Winer's modification of Tukey's technique. No significant differences were observed between experimental and control groups. This result may occur, of course, in that a significant multivariate F does not insure that pairwise comparisons will be significant.

With respect to the Gates-MacGinitie Subtest 6, Visual Motor Coordination, the pairwise comparisons did yield one significant difference in groups. Experimental Group 4 was found to be significantly poorer in performance than Experimental Group 5. The means for the experimental and control groups by replications and total are presented in Table 16.

TABLE 16

Means for Experimental and Control Groups by Replications and Total for Gates-MacGinitie Subtest 6, Visual Motor Coordination

Experimental and Control Groups	Henderson	Vero Beach	Total
Experimental 1	8.5	8.0	8.3
Experimental 2	8.1	6.9	7.6
Experimental 3	9.3	9.0	9.2
Experimental 4	8.0	4.7	6.3
Experimental 5	10.9	9.7	10.4
Control 1	6.9	9.0	8.0

In addition to the procedures described on the preceding pages, analyses of covariance procedures were utilized with the Gates-MacGinitie data in the same manner as with the Metropolitan data described earlier. Again predictor sets including corresponding pretest scores, pretest I.Q. scores, and age were used as covariates. No new results were obtained.

Inasmuch as mode of test administration appeared to make no difference after the first subtest, the design was collapsed to a two-way, groups x replications design and analysis of covariance performed. As would be expected, these results agreed with those obtained from the three-way analysis. The predictive value of the corresponding Gates-MacGinitie pretest scores and age was small as in the case of the Metropolitan with the pretest I.Q. scores a little better for particular subtests.

As indicated earlier, separate analyses were performed to determine significant differences in the performances of Henderson Control Group 1 (monitored) and Control Group 2 (unmonitored). Two significant results were obtained. The unmonitored Control Group 2 scored significantly higher than the monitored Control Group 1 on the Gates-MacGinitie Subtest 5, Letter Recognition, and Subtest 6, Visual Motor Coordination. The posttest means for each of the subtests for the two groups are presented with error terms and t values in Table 17.

The table of F ratios for the total three-way analysis of the Gates-MacGinitie Reading Tests subtest socres is presented in Appendix L. Intercorrelations of Gates-MacGinitie subtests for pretest and posttest administrations appear in Appendix M.

TABLE 17

Comparisons of Henderson Monitored and Unmonitored Control Groups by Gates-MacGinitie Reading Tests Subtests Means

Gates-MacGinitie Subtest	Control 1 (Monitored) (N = 15)	Control 2 (Unmonitored) (N = 15)	Mean Square Error	t Value
1 - Listening Comprehension	8.3	8.5	5.85	-0.23
2 - Auditory Discrimination	12.8	13.3	10.47	-0.42
3 - Visual Discrimination	7.9	9.3	16.16	-0.95
4 - Following Directions	6.3	5.6	7.86	+0.68
5 - Letter Recognition	6.1	11.7	13.45	-4.19**
6 - Visual Motor Coordination	6.9	12.1	17.94	-3.37**
7 - Auditory Blending	5.0	6.6	5.33	-1.90
8 - Word Recognition	8.3	9.3	8.81	-0.92

**Significant above the .01 level, two tailed test.

Illinois Test of Psycholinguistic Abilities

Inasmuch as each of the twelve subtests of the Illinois Test of Psycholinguistic Abilities was administered to each child on an individual basis, the dimension representing mode of test administration was not a part of the analysis. Hence, the design was a two way analysis (experimental and control groups x replications) with Control Group 2 (unmonitored) at Henderson again being considered in a separate analysis.

A multivariate analysis performed with the pretest data (see summary of data for Henderson in Table 18 and for Vero Beach in Table 19) from the subtests of the Illinois Test of Psycholinguistic Abilities yielded only one significant difference in initial status. As in the earlier cases, there was a significant difference between replications. Inspection of the data indicated that it was caused by superior performance of the Vero Beach students on Subtest 3, Visual Sequential Memory, and Subtest 10, Manual Expression. There were no other significant multivariate effects in the analysis of the pretest data.

As in the two previous cases, the analysis of the posttest data began with a multivariate analysis by groups and replications for each of the subtests. The means for the groups are presented in Table 20 for Henderson and in Table 21 for Vero Beach.

No significant differences in posttest performance were obtained through the use of the multivariate test of significance. Two significant univariate results, however, suggested a replication difference on the Illinois Test of Psycholinguistic Abilities, Subtest 2,

Visual Reception, and Subtest 12, Sound Blending. The reader will note that a comparison of Tables 18 and 19 for these two subtests reveals a tendency for Vero Beach students to outperform Henderson students.

The multivariate analysis of the data was followed (as in the two previous analyses) by an analysis of covariance using: (1) corresponding pretest scores, (2) corresponding pretest scores and pretest I.Q. scores, and (3) corresponding pretest scores, pretest I.Q. scores, and age, as predictor sets. No additional information was revealed.

Finally, the Control Group 1 (monitored) and the Control Group 2 (unmonitored) at Henderson were compared for significant differences. There were no significant differences in the two groups on any of the twelve subtests.

The table of F ratios for the total two way multivariate analysis of the Illinois Test of Psycholinguistic Abilities subtests appears in Appendix N. Intercorrelations of the subtest for pretest and posttest administrations are presented in Appendix O.

TABLE 18

Initial Illinois Test of Psycholinguistic Abilities Data
by Subtests for Groups in Henderson Replication

Subtest	Experimental Groups					Control Groups		Means	Standard Deviation
	1	2	3	4	5	Monitored	Unmonitored		
ITPA 1 (Auditory Reception)	12.87 N=14	13.00 N=14	11.71 N=14	10.40 N=15	13.71 N=14	14.56 N=16	11.80 N=15	12.59	5.39
ITPA 2 (Visual Reception)	10.27 N=15	11.07 N=14	10.86 N=14	10.67 N=15	10.71 N=14	10.94 N=16	11.47 N=15	10.85	4.53
ITPA 3 (Visual Seq. Memory)	10.33 N=15	10.86 N=14	10.57 N=14	8.47 N=15	12.71 N=14	12.44 N=16	9.47 N=15	10.69	4.71
ITPA 4 (Auditory Association)	9.53 N=15	9.21 N=14	7.29 N=14	8.53 N=15	10.93 N=14	11.56 N=16	11.07 N=15	9.77	4.38
ITPA 5 (Auditory Seq. Memory)	23.00 N=15	21.43 N=14	19.21 N=14	22.93 N=15	21.50 N=14	22.50 N=16	22.93 N=15	21.97	8.64
ITPA 6 (Visual Association)	9.40 N=15	8.00 N=14	9.00 N=14	9.87 N=15	10.43 N=14	9.75 N=16	8.80 N=15	9.33	5.56

TABLE 18

(Continued)

Subtest	Experimental Groups					Control Groups		Means	Standard Deviation
	1	2	3	4	5	Monitored	Unmonitored		
ITPA 7 (Visual Closure)	10.53 N=15	12.50 N=14	12.93 N=14	13.47 N=15	14.14 N=14	13.94 N=16	12.93 N=15	12.92	4.29
ITPA 8 (Verbal Experssion)	8.93 N=15	11.64 N=14	10.50 N=14	12.60 N=15	14.00 N=14	11.38 N=16	13.47 N=15	11.78	3.83
ITPA 9 (Grammatic Closure)	8.13 N=15	5.36 N=14	5.93 N=14	6.40 N=15	6.43 N=14	7.88 N=16	6.93 N=15	6.76	3.15
ITPA 10 (Manual Expression)	15.07 N=15	13.64 N=14	13.64 N=14	16.93 N=15	14.36 N=14	17.00 N=16	16.13 N=15	15.31	4.18
ITPA 11 (Auditory Closure)	5.93 N=15	5.50 N=14	5.36 N=14	6.60 N=15	6.00 N=14	7.75 N=16	7.47 N=15	6.41	3.10
ITPA 12 (Sound Blending)	6.60 N=15	6.79 N=14	5.79 N=14	6.13 N=15	6.93 N=14	6.50 N=16	6.33 N=15	6.44	2.92

TABLE 19

Initial Illinois Test of Psycholinguistic Abilities Data
by Subtests for Groups in Vero Beach Replication

Subtest	Experimental Groups					Monitored Control Group	Means	Standard Deviation
	1	2	3	4	5			
ITPA 1 (Auditory Reception)	17.69 N=13	13.46 N=13	15.77 N=13	15.27 N=15	15.77 N=13	13.14 N=7	15.35	5.56
ITPA 2 (Visual Reception)	11.08 N=13	9.69 N=13	12.00 N=13	13.07 N=15	11.39 N=13	13.14 N=7	11.65	4.17
ITPA 3 (Visual Seq. Memory)	10.54 N=13	7.77 N=13	9.39 N=13	10.47 N=15	11.08 N=13	11.71 N=7	10.04	5.11
ITPA 4 (Auditory Association)	12.92 N=13	8.92 N=13	10.46 N=13	10.60 N=15	11.46 N=13	8.71 N=7	10.66	4.37
ITPA 5 (Auditory Seq. Memory)	23.92 N=13	21.31 N=13	21.62 N=13	20.87 N=15	21.31 N=13	17.00 N=7	21.32	7.18
ITPA 6 (Visual Association)	8.92 N=13	10.69 N=13	12.46 N=13	10.13 N=15	11.54 N=13	12.71 N=7	10.92	5.22

TABLE 19

(Continued)

Subtest	Experimental Groups					Monitored Control Group	Means	Standard Deviation
	1	2	3	4	5			
ITPA 7 (Visual Closure)	12.77 N=13	13.69 N=13	12.00 N=13	15.27 N=15	14.23 N=13	13.57 N=7	13.64	4.51
ITPA 8 (Verbal Expression)	12.39 N=13	13.54 N=13	14.08 N=13	12.67 N=15	9.46 N=13	12.57 N=7	12.45	4.04
ITPA 9 (Grammatic Closure)	6.77 N=13	5.77 N=13	6.77 N=13	7.00 N=15	9.00 N=13	5.43 N=7	6.91	3.42
ITPA 10 (Manual Expression)	15.23 N=13	18.31 N=13	17.62 N=13	17.33 N=15	18.69 N=13	18.00 N=7	17.49	4.88
ITPA 11 (Auditory Closure)	8.15 N=13	8.92 N=13	7.62 N=13	7.60 N=15	6.46 N=13	4.86 N=7	7.47	3.50
ITPA 12 (Sound Blending)	7.92 N=13	7.85 N=13	7.23 N=13	6.53 N=15	8.77 N=13	6.14 N=7	7.49	2.94

TABLE 20

Posttest Groups Means for Subtests of the Illinois Test of Psycholinguistic Abilities for Henderson Sample by Experimental and Control Groups

Subtest	Experimental Groups					Control Group 2 (Monitored)
	1	2	3	4	5	
1 - Auditory Reception	14.50	14.85	14.77	16.75	16.85	17.87
2 - Visual Reception	11.50	13.62	10.92	12.50	12.00	12.40
3 - Visual Sequential Memory	11.79	14.85	15.23	12.58	14.62	14.93
4 - Auditory Association	13.36	14.08	11.00	14.33	13.85	14.80
5 - Auditory Sequential Memory	25.79	21.54	21.46	21.50	24.15	23.73
6 - Visual Association	12.79	11.23	11.77	14.17	16.15	13.47
7 - Visual Closure	14.43	15.62	17.08	17.25	19.54	19.20
8 - Verbal Expression	15.50	17.69	15.23	17.00	19.08	19.20
9 - Grammatic Closure	7.71	6.92	7.46	7.42	7.92	9.53
10 - Manual Expression	18.29	16.54	16.39	17.92	20.85	18.47
11 - Auditory Closure	10.71	9.62	8.08	10.42	10.00	11.67
12 - Sound Blending	6.57	7.46	6.39	7.33	8.54	7.07

TABLE 21

Posttest Groups Means for Subtests of the Illinois Test of Psycholinguistic Abilities for Vero Beach Sample by Experimental and Control Groups

Subtest	Experimental Groups					Control Group 1 (Monitored)
	1	2	3	4	5	
1 - Auditory Reception	17.40	17.64	16.54	17.00	19.20	18.50
2 - Visual Reception	14.10	14.18	13.69	14.25	11.70	10.67
3 - Visual Sequential Memory	14.40	12.82	14.08	13.50	16.20	12.67
4 - Auditory Association	15.50	11.91	15.15	14.25	16.60	12.17
5 - Auditory Sequential Memory	25.70	21.91	23.54	20.58	23.40	23.50
6 - Visual Association	16.00	13.55	13.15	15.42	13.40	15.00
7 - Visual Closure	18.20	16.00	17.54	18.33	18.50	18.17
8 - Verbal Expression	19.40	17.73	18.08	16.67	18.20	15.50
9 - Grammatic Closure	7.60	7.09	7.77	6.67	9.40	7.17
10 - Manual Expression	20.40	20.55	19.92	18.83	18.60	20.17
11 - Auditory Closure	11.00	10.46	9.92	11.33	12.90	9.50
12 - Sound Blending	8.90	7.00	8.92	7.08	11.10	8.67

Significant Differences in I.Q. Test Scores

A final aspect of the evaluation data analysis involved the scores obtained from the pretest and posttest administrations of the Stanford-Binet Intelligence Scale. Although the Vero Beach students had apparently scored somewhat higher than the Henderson students on the pretest, there seemed to be little differences in the posttest scores.

Therefore, a multivariate analysis was performed on the pretest I.Q. scores for the two replications. A significant difference in replications ($F = 4.10$ with 1 and 130 degrees of freedom, significant above the .045 level) was indicated in favor of the Vero Beach students. The same analysis was performed using the posttest I.Q. scores and no significant differences between replications appeared. In other words, initial differences in I.Q. scores between Henderson and Vero Beach children had disappeared after Head Start intervention.

At this point, an analysis was performed to determine which classes in each replication had increased their posttest mean I.Q. scores significantly over their pretest I.Q. scores. This analysis consisted of performing t tests for correlated means on the pretest and posttest scores for each group. The pretest and posttest means, differences in pretest and posttest means, and t values for each group in each of the two replications are presented in Table 22.

The reader will note that the groups in the Henderson replication increased their means scores in all cases, ranging from as little as four points to as high as twel e points. All were

TABLE 22

Pretest and Posttest Means, Differences, and t Values Based on I.Q. Scores by Experimental and Control Groups and Replications

Replication	Experimental and Control Groups	Pretest Means	Posttest Means	Differences in Pretest Posttest Means	t Values
Henderson	Exp. 1	81.4	88.9	7.5	2.71**
	Exp. 2	80.8	92.5	11.7	4.08**
	Exp. 3	78.4	88.1	9.7	3.38**
	Exp. 4	77.0	87.3	10.3	3.44**
	Exp. 5	88.3	92.3	4.0	2.09*
	Control 1	84.2	92.5	8.3	3.11**
Vero Beach	Exp. 1	84.6	94.0	9.4	2.87**
	Exp. 2	85.5	87.9	2.4	0.77
	Exp. 3	88.3	95.4	7.1	2.47*
	Exp. 4	86.9	87.6	0.7	0.23
	Exp. 5	85.5	94.1	8.6	2.62*
	Control 1	81.3	81.2	-0.1	-0.02

* Significant above the .05 level, one tailed test.
** Significant above the .01 level, one tailed test.

significant. In the Vero Beach replication, three groups improved their posttest performance significantly with increases in means of 9.4, 8.6, and 7.1. Increases in the Henderson groups were, therefore, greater than in the Vero Beach groups, explaining the differences in effects noted between the pretest multivariate analysis and the posttest analysis.

PART SIX

CONCLUSIONS

The present evaluation was designed and conducted to test the effectiveness of five experimental treatments on the language development of a sample of Head Start children. The specific operational hypothesis to be tested was:

> The language achievement of the experimental and control classes participating in the evaluation will support a ranking in effectiveness of the treatment methods of the following order (most effective to least effective): Group 5, Group 4, Group 3, Group 2, Group 1, Control Groups 1 and 2.

Although significant differences in experimental and control groups were found in the cases of several subtests, the data do not support the hypothesis. The language achievement of the groups did not rank in the order predicted. The only exception to this conclusion is the fact that experimental groups, in general, outperformed control groups on the Metropolitan Subtest 4, Alphabet and on the Gates-MacGinitie Subtest 5, Letter Recognition. Apparently, the Buchanan Readiness in Language Arts program, which served as a base for each of the five experimental treatments, brought about a fairly consistent change in the variable represented by Alphabet and Letter Recognition. This was the only pattern related to treatment ordering found in the evaluation.

In the designing of the evaluation, the postion was taken that the treatments were different enough from each other and certainly from the control treatments that some general ordering, logically, could be expected. Two alternatives to the proposition that they truly were not differential suggest themselves. First, the criterion tests may not have been discriminating enough to reveal consistent differences. Inspection of the data suggests that this was not true. The present investigators have concluded that the tests used were appropriate for the evaluation.

A second alternative, is the possibility that, although teachers were monitored and teacher training was an experimental variable, the individual effectiveness of the various teachers was so great that it obfuscated treatment differences if they existed in fact. That is to say, the personal variable was so influential that it masked other effects. This contention, of course, has been suggested in other experimental situations by other investigators and the present writers believe that it occurred in the Head Start evaluation reported here. It may well be that, if no means can be found to significantly lower teacher variability, experiments of this type can be expected to be of limited value in improving the educational process.

In addition to the operational hypothesis, five questions were posed and were to be considered as the sample and the data permitted. These questions are restated below with the comments of the investigators.

1. Will Head Start classes in one region score significantly higher on the average on any of the tests administered than children in another region?

This question can be answered only through pooling the data from the Tulane University and the University of Texas evaluations and analyzing across regions.

2. Will classes in which the children speak a language or dialect other than English differ significantly on any of the pretests from those classes in which English is spoken by the children?

The language of the children in the two replications could not be considered to differ from English although there was evidence of a "mild-to-strong" Southern Negro dialect in the Henderson groups. Further analysis of the data from all three regions may serve to shed light on whether or not this dialect, after all, was significant in the observed effectiveness of the treatments.

3. Will the two control groups perform differently on any of the tests administered (monitor versus non-monitor effect)?

The analysis of the data presented in the preceding section has shown that in a few cases the unmonitored control group outperformed the monitored control groups. The present investigators believe that these differences were more related to differences in teacher effectiveness than to the influence of the monitor.

4. Will there be significant interaction between replications and treatments (inconsistency of treatments across replications) in cases where the second replication of a region is comprised of children speaking languages or dialects different from English?

There were no replication by treatment interactions that could be related to differences in language or dialect.

5. Will the effectiveness of the treatments differ as a function of the age of the children in the various classes?

The ages of the children in the evaluation did not vary sufficiently for this question to be answered.

A final effect to be noted was the substantial increase in posttest I.Q. scores over pretest scores for the groups in the Henderson replication. All groups made statistically significant gains. In Vero Beach three of six groups increased these scores significantly. Clearly, the Henderson groups, both experimental and control, made greater progress. Was the Head Start program more effective generally in Henderson than in Vero Beach? Could this have been caused by the rural (and often geographically isolated) background of the children in Henderson as compared with Vero Beach? These are questions for which the evaluation provides provocative speculations but no conclusions.

APPENDIX A

TEACHER'S MANUAL

SWANSON SUPPLEMENT

PREPARED BY

REBECCA G. SWANSON

Committee on Educational Research
University of South Carolina
Columbia, South Carolina

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TEACHER'S MANUAL

REINSTEIN REINFORCEMENT PROGRAM

DEVELOPED FOR

HEAD START EVALUATION 68-69

Prepared by: Barry J. Reinstein

for and in conjunction with

Committee on Educational Research
University of South Carolina
Columbia, South Carolina

REINSTEIN REINFORCEMENT PROGRAM

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REINSTEIN REINFORCEMENT PROGRAM

I. General Objectives of Reinforcement Program

The reinforcement program described herein has three basic objectives. First, the reinforcement program was developed to emphasize and strengthen the various concepts and skills introduced through the Buchanan Readiness in Language Arts materials. Such concepts as left and right, up and down, top and bottom, under and over, first and last, front and back, colors, letters, and words, will be constantly reviewed and re-emphasized by the reinforcement materials. The rationale underlying the reinforcement program is that the children must be able to understand, apply and retain the information presented to them by means of the Buchanan package. The reinforcement pictures, formally called "progress checks", will be an indication of the extent to which the lessons have been learned by the Head Start children.

Second, the reinforcement program will attempt to instill within the Head Start children, the attitude that learning can indeed be an enjoyable experience if not actually fun. According to the program the children will be asked to do things which they like to do (e.g. color) and will receive prizes or rewards which they enjoy having (e.g. candy, toys). Thus, by means of the reinforcement program, the association of learning and enjoyment (having a good time) will be strengthened.

Third, the reinforcement program attempts to develop in the children attitudes that would be conductive to active participation in the learning process of the school, particularly with respect to

motivation to achieve and to such related variables as persistence and delay of gratification. The general procedure by which we hope to promote the above attitudes is to reinforce (emphasize, praise, call special attention to) childrens' behavior which is indicative of or conductive to adequate school performance. Instead of waiting for such behavior to occur by itself, the reinforcement program introduces and calls forth the desired behavior so that it can be reinforced. (It need be mentioned here that all spontaneous desired behavior (anything relating to learning activity) is to be reinforced as well (i.e. verbally-praise).

The reinforcement when it does occur will be both a) immediate and concrete and b) delayed and symbolic. The rationale for this two-fold approach is to lead the children from the concrete relationships of their present environment to the abstract relationships they will face upon entering the formal school system. It should be emphasized here that this transition will be a very gradual one.

The teacher will acquire a more thorough grasp of the intent of the reinforcement program if she keeps in mind five patterns of behavior common to the disadvantaged child which the program is attempting to overcome.

1. The disadvantaged child does not receive enough reinforcement of his behavior. We, during this program will attempt to reinforce all desirable behavior.

2. Reinforcement for the disadvantaged child, when it does occur, usually comes from another child. This program emphasizes adult-administered reinforcement.

3. Reinforcement for the disadvantaged child is usually only non-verbal. Our program will strongly emphasize verbal reinforcement

(praise) in conjunction with pats, hugs, etc.

4. Reinforcement for the disadvantaged child is less focused in terms of being directed towards the adequacy of his specific acts. That is, his reinforcement is apt to consist of a rather vague, generalized approval such as, "That's a good boy", or merely a smile, rather than such specific approving words as, "You tied your shoes just right" or"You really did a good job of helping me with the sweeping". The teacher in this program is to emphasize the latter approach at every opportunity.

5. Reinforcement for the disadvantaged child is more toward inhibiting behavior than it is toward encouraging exploratory activity. Teachers in the present program should attempt to reinforce only those behaviors which are or are leading to learning experiences.

II. General Information Concerning the Reinforcement Program

1. The reinforcement program is similar to the Buchanan and Supplement packages in that it requires a specific block of time. This block of time is approximately 20 minutes.

2. The reinforcement program consists of:

a. Administering the progress check pictures

b. Dispensing candy for successful performance

c. Allowing the children to select their free play activity and toys when appropriate

d. Staying with and guiding the free play activities of the children for the entire specified time

3. The reinforcement program follows immediately upon the completion of the supplement materials for that particular

day. By no means can the reinforcement be postponed until the afternoon or some other convenient time.

4. The reinforcement program will occur once per day, in correspondence with one lesson per day on the Buchanan and Supplement material. However, verbal reinforcement (praise) should continue throughout the entire school day.

5. Reinforcement candy will be provided for every teacher. The candy will be packaged in cellophane bags with five small pieces of candy per bag. Each child upon success with the progress check pictures is to receive one (1) bag of candy.

6. Distribution of the candy should take place away from the teaching area whenever possible.

7. Reinforcement prizes (toys) will be provided for every teacher. A wide selection of toys will be available. It must be remembered, however, that the children are to be given a choice of only four (4) prizes during any particular two week period. Every two weeks the selection of toys must be changed.

8. Distribution of the prizes should take place away from the teaching area whenever possible.

9. Each teacher should obtain a reasonably large cardboard box for each child in the class. This box can then be used to hold progress check pictures, candy, toys or similar objects. (These boxes should be obtained from the local area, for it would be impossible to mail such material without excess damage.)

10. Each teacher must remember to record in the reinforcement book:

a. The number of the progress check each child succeeds with

b. The activity each child selects

c. The appropriate number of successes each child has accumulated to date (starting over again after each four (4) successes for each child)

d. The specific toy each child selects upon accumulating four successes.

III. Reinforcement Record Book

The reinforcement record book will provide an overall picture of the whole reinforcement program. The book consists of:

a. General information pertaining to the project.

b. Daily lesson record sheets

c. Sample copies of each of the progress check pictures for every lesson of the Buchanan package.

A narrow yellow marker will be provided on which to list the names of all the children in the class. This marker needs to be advanced in the book after each lesson is completed. Reference to the record book will remove any hesitancy as to which progress check pictures are to be presented with which Buchanan and supplement lessons. It must be remembered that the record book is to be filled out everytime a lesson is presented.

IV. Step-by-Step procedure for administration of Reinstein Reinforcement Program

1. Before presentation of the very first Buchanan lesson, the teacher must explain to the children in appropriate terms (to their understanding) how this project is to work. That is, the teacher need only explain that the children will learn and do many enjoyable things in the coming months, and that if each child will

pay attention to the activities presented and does a good job with them (not necessarily perfect) they will receive some prizes later on. The teacher should re-emphasize that the prizes will only be given to those children who do exactly as they are told.

2. Immediately upon completion of the supplement activities, the teacher should again remind the children that if they do the next activity just as they are told to they will receive candy, etc.

3. The teacher will then present picture number three (3) — the most difficult-to all the children and read the instructions written on the picture. It should be mentioned here that the teacher may vary the instructions somewhat in order to make the task clearer to the children, but the teacher may not change the intent of the task. The teacher should also not give any cues as to how the task is to be done. This is a test (although we never say this to the children) and should be treated as such.

4. The teacher and aide (s) should carefully watch the children at work and become sensitive to when they need the instructions repeated once more. This is allowable, but again do not give the answer away. If questioned by a child the teacher or aide (s) should reply ".....go ahead and do exactly as I have said. Do the very best you can."

5. As soon as a child appears to be finished the teacher should check his work. If the child has been successful, the teacher is to write the child's name on his picture and send him to the aide to receive his candy.

6. The question will arise as to what is the criterion of success. The child does not have to make a perfect picture. The teacher should be very flexible and lenient. That is, if the task

calls for the child to color a letter red, any red coloring in the appropriate letter is O.K. As long as no other object on the page has been colored, the child does not have to fill in all the letter. Similarly, if the child is asked to color a word, any coloring of just that word, indicating that the child knows what you asked, is a success. Don't be too strict. We want the children to succeed.

7. The teacher is to check each child's picture separately and send those children succeeding to the aide one at a time.

8. The aide will collect the successful childrens' pictures as the children are sent to her. The aide will then give each of these children a bag of candy and emphasize that they are getting the candy because they have done such a good job. These children then go to another aide (it may be the same aide if only one (1) is available)who will inform each child of the choice of free play activities and allow the child to make his selection.

9. The teacher during this time is explaining to the remaining children what should have been done with picture number three (3) This is the time to teach. The teacher then collects all the incorrectly marked picture number 3's and gives out picture number two (2), saying ".....You almost got that picture right, but ow lets try this one."

10. The teacher then reads the instructions for picture number 2, and goes through the same procedure as described above for picture number 3.

11. The aides perform the same activities as described for picture number 3 (i.e., point #8)

12. The teacher will explain to the remaining children what should have been done with picture number 2 and will then go to

picture number one (1) in the same fashion as presented above.

13. The aides act as described above in picture number 3.

14. At this time all the children should have been successful with at least one of the three pictures and received his candy and play activity, thus it is at this time that the aide or the teacher indicates in the reinforcement record book the activity each child has selected. Next, the teacher or aide will obtain from the pictures collected the number of the picture each child was successful with and record this in the book. The pictures should then be placed in each child's individual box, to be taken home later (the picture not the box). Also recorded in the book at this time is the accumulated number of successful lessons each child has completed up to this date.

15. The teacher should look over the previous day's book and determine which children have received three (3) successes, so that upon their fourth (4th) success they will be given their choice of a toy. Thus, after every four successes the teacher is to begin recording from one (1) again.

16. The teacher must select ahead of time the four (4) toys which will serve as prizes for a two-week period. These choices must be written on each record sheet for each lesson. Whenever a child has successfully completed 4 lessons the teacher or aide will allow him to chose his prize immediately after receiving his candy and prior to going to his play activity. The teacher or aide will record his choice in the record book. It may be clarified here, that the reason for keeping the same toys as choices for two weeks is to give the children a chance to pick another object which they saw and wanted the time before.

17. In the event that some children do not get any of the pictures correct, these children are not to receive any candy and are to be told what activity they are to play at. Do not give these children a choice. It must be emphasized here that tact must be used and the teacher must explain to these children why they have not received the candy and choice of activity and stress the point that tomorrow they will get another chance,

18. This procedure of explaining why the children are being reinforced should be continued until the children understand how the system works. About two week s time should be sufficient for this understanding but if it is necessary to explain for each lesson by all means do so.

19. Anywhere within the above procedure the teacher may suggest to the children that they may color the rest of the pictures at home and can put them together to form a coloring book. Also, the teacher should mention that the candy may be eaten immediately or saved for a later time.

20. The teacher is required to change the choice of play activities once a week. This will provide additional variety for the children.

V. Concluding Remarks

The experiment you are about to enter into is both significant and exciting. You will be contributing to the ever increasing body of knowledge concerned with how children learn. It is sincerely believed that the materials and training with which you have been provided in addition to your own ability and sensitivity will have

a significant effect upon the lives of your students. We wish you best of luck and would welcome any comments and/or opinions you may have pertaining to the implimentation of the reinforcement program.

Barry J. Reinstein

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Suggestions for Classroom Arrangement

Specific areas within room

1. block corner
2. doll corner
3. rug or circle (open place for story telling, etc.)
4. science corner
5. painting area
6. woodworking area

Suggested Free Play Activities

Indoor Equipment (Manipulative Materials)

1. felt board and felt pieces
2. pegboards
3. puzzles
4. blocks (units building kindergarten blocks)
5. wooden telephone
6. ABC blocks
7. beads
8. small plastic bricks
9. hammer - nail set
10. parquetry set (a patterned wood inlay)
11. wooden shoe
12. dressing frames
13. postal box
14. counting frame
15. stacking discs
16. barrels (graduated size)
17. clock
18. knock-out bench
19. pounding bench
20. graduated cylinders
21. dominoes
22. divided puzzles
23. sequence boards
24. spinner board games
25. lotto boards
26. Lincoln logs
27. block puzzles
28. housekeeping dolls and dress-ups
29. block (large, hollow)
30. transportation toys
31. clay, play dough, paint, crayons
32. water play
33. paper maiche
34. sand table
35. paper cutting with scissors
36. books
37. story telling or reading - listening time
38. record player

Outdoor Equipment

1. jungle gym
2. sand box
3. rubber saddle swings
4. slide
5. tricycles of varying sizes
6. pedal cars
7. wagons
8. wheelbarrows
9. small cars and trucks
10. doll carriages
11. rocking boat
12. balls
13. see-saw
14. balance board

Suggested Rewards

1. watches
2. boats, trucks, cars
3. coloring books
4. crayons
5. clay
6. animal erasers
7. ballons
8. marbles
9. small plastic airplanes
10. baby dolls
11. little girl bracelet and necklace
12. parachutes
13. binoculars
14. western sets
15. banjos
16. skipping ropes
17. monkeys on sticks
18. kiddies stationery
19. brave chief headdress

APPENDIX C

National Evaluation Instruments

I. Pre and Post Tests:

1. Stanford-Binet, long form
2. Birch Response Style
3. Inventory of factors affecting the Stanford-Binet
4. Gumpgookies
5. WPPSI - Animal House
6. Revised Pre-School Inventory
7. Family Interview
8. Play Situation-Picture Board Sociometric Technique

II. "Middle Measure" Tests:

1. Classroom Observation of Substantive Curricular Input (OSCI)
2. Post Observation Teacher Rating Scales (POT)

III. Additional Child and Program Variable Instruments:

1. Characteristics of Teaching Staff
2. Child Master Data Form
3. Staff Member Information
4. Class Registers
5. Quality Control Standards
6. Parent Consent Forms
7. Class Facilities and Resources Inventory
8. Class Parent Participation Record
9. Center Parent Participation Record
10. Medical/Dental Information
11. Parent Inventory

HEAD START INTERVENTION CHECK LIST

APPENDIX D

Region _____ Treatment _____

Center _____ Book _____ Lesson _____

Teacher _____ Time: from _____ to _____

Monitor _____ Number of Children _____

Date _____ Number of Aides _____

	YES	NO
1. Adheres to 30-minutes specified time period per Buchanan lesson. (If less than 25 minutes or more than 35 minutes, write amount of time in NO column.)		
2. Adheres to specification of one Buchanan lesson per day.		
3. Adheres to correct sequencing of Buchanan lesson followed by supplement.		
4. Adheres to specified 20-minutes break following Buchanan lesson. (If less than 15 minutes or more than 25 minutes, write time in NO column.)		
5. Adheres to allotted 30-minute time period for supplement lesson. (If less than 25 minutes or more than 35 minutes, write time in NO column.)		
6. Teaching was begun within 10 minutes of schedules time. If not, include explanation given by teacher for deviation from scheduled time in the COMMENTS section.		
7. Indicate which objectives of Buchanan lesson were covered by teacher and which were omitted. (Write in number of page corresponding to relevant objective.)		

COVERED _____ OMITTED _____

8. If applicable, indicate which activities of Swanson Supplement were covered by teacher. Which were omitted? If not applicable, check box to right. NOT APPLICABLE ☐

COVERED _____

OMITTED _____

9. COMMENTS ON PREPARATION AND ADMINISTRATION: _____

Region _____ REINFORCEMENT _____

Center _____ Book _____ Lesson _____

Teacher _____ Time _____

Monitor _____ Number of Children _____

Date _____ Number of Aides _____

	YES	NO
10. Teacher follows correct sequencing of Buchanan lesson, supplement, and reinforcement.		
11. Children are presented with test pictures immediately following completion of supplement lesson.		
12. Test pictures are handled appropriately, i.e., if child fails on first picture, next easiest picture is given, etc.		
13. Children are reinforced with M & M's following successful performance on a test picture.		
14. Teacher gives each child selection of activities immediately after success with pictures.		
15. Time (15 to 20 minutes) is provided for child to engage in chosen activity following success on a test picture.		
16. Distribution of rewards takes place away from teaching area.		
17. Each student has his own place to keep and accumulate toys, etc.		
18. Reinforcement records are up to date.		
19. Reinforcement records are kept accurately.		

20. Use the space below to make any comments you feel are necessary and are not covered by the above items.

_____

_____

_____

_____

_____

_____

_____

APPENDIX E

Committee on Educational Research
University of South Carolina

Head Start Evaluation and Research Center
Examiner Evaluation Form

Examiner's Name _____ Examiner's No. _____

Test Observed _____ Observer _____

Date _____ Time spent observing (minutes) _____

Directions: The observer is to place a letter rating (A, B, C, D) in the appropriate blank, designating in his judgment the examiner's competence during the period of observation. Under "Comments," specific references should be made to relevant behavior, positive or negative, as appropriate.

Rating Key:

A - highly professional competence; near optimal performance for conditions; data valid.

B - good overall competence, but with specific minor areas needing improvement; satisfactory performance; data valid.

C - competence only fair; inefficient procedures which jeopardize the validity of the data; this area requires special attention.

D - insufficient competence; inappropriate procedures which invalidate the data; unacceptable performance.

___1. RAPPORT: Is the relationship established by the examiner conducive to valid responses from the child?
Comments _____

___2. MECHANICS: Is the examiner's knowledge of and skill with materials and procedures sufficiently expert?
Comments _____

___3. PROBING: Has the child's capacity to respond correctly been maximally probed within the context of the item?
Comments _____

___4. REINFORCEMENT: Are the examiner's reactions to the child's responses appropriate to the situation?
Comments _____

___5. TEST-ORIENTED NEEDS: Does the examiner demonstrate a sensitivity to the characteristics of the child relevant to the test situation and adapt the administration accordingly?
Comments _____

___6. BIOLOGICAL NEEDS: Does the examiner demonstrate a sensitivity to fatigue, boredom, biological needs, etc., and take proper steps to alleviate them quickly?
Comments _____

___7. In your judgment are the data obtained by this examiner acceptable?
(A - Yes, B - Questionable, C - No)

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APPENDIX F

UNIVERSITY OF SOUTH CAROLINA
COMMITTEE ON EDUCATIONAL RESEARCH

REPORT ON TESTING CONDITIONS

Date _____

Observer _____

Test _____

Tester _____

CENTER _____
Name of Center City State

TESTING SITE

Type of Facility (room, porch, etc.) _____

_____

Location (center bldg., adjoining bldg., etc.) _____

_____

CONDITIONS	Optimal or Good	Fair but Acceptable	Unacceptable
Accessibility to Classroom			
Freedom from noise			
Privacy			
Working space			
Working surface, chairs, etc.			
Lighting			
Ventilation			
Temperature			
Cleanliness			

COMMENTS _____

_____

_____

_____

OVERALL RATING OF CONDITIONS

A - Optimal
B - Good
C - Fair but adequate (insignificant deleterious effects on data).
D - Conditions so poor that data are significantly impaired.

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APPENDIX G

1968-1969 Evaluation

Sample Identification Questionnaire

UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, S. C. 29208

School of Education

July 30, 1968

The University of South Carolina Evaluation and Research Center for Project Head Start is one of thirteen centers throughout the United States charged with the responsibility for performing research and evaluation functions designed to enhance the effectiveness of Head Start Programs. The South Carolina Center serves the states of Virginia, North Carolina, South Carolina, Georgia, and Florida.

During the 1968-69 year, the research emphasis in this region will be in the area of language development. Thirteen Head Start Programs will be selected in the region to participate in the research. It has been suggested to us that your program might meet the criteria for inclusion in this sample and that you may be interested in participating.

Essentially, the research will consist of implementing several approaches to language development in various locations and comparing the effectiveness of the programs. Children will be tested on several variables early in their Head Start experience and again near the end of their first year.

Two teachers from each participating program (it is recognized that one Head Start Center may have several programs or sub-units) will be involved in the investigation and some of these groups of two will receive training in the use of a given language program from personnel of the Evaluation and Research Center. In the case of one pair of teachers, the training will be approximately three weeks in duration. The teachers from the other twelve programs will receive considerably less training and in some cases none at all.

It is obvious that any time an on-going educational program is involved in a research project, there is some inconvenience to those responsible for operating the program. Naturally if your program is included in the investigation, every effort will be made to make this inconvenience minimal. It does seem appropriate, however, to list as concisely as possible those items and activities which are required or will affect each participating program. These are listed below:

1. Each child in one class of each participating program will be tested for approximately six hours in the fall and again for approximately six hours in the spring. No child will be tested for more than ninety minutes in one day.

2. Two teachers in each participating program will conduct a language development program in accordance with instructions from the Evaluation and Research Center. In some cases this will involve special training for the teacher which will be conducted by University of South Carolina personnel.

3. Because of the extensive individual testing noted above, it is necessary that one and perferably more rooms be available for testing purposes. It is necessary that the room(s) be equipped with a table and two chairs.

4. In order to avoid delays and conserve resources, children must be available when needed for testing during the school day.

5. In addition to tests administered to each child, additional information related to the classroom and to teaching personnel will be collected.

6. An observer will visit one of the two participating classes in each program on an average of twice per week.

7. Less frequently, other observers will visit the Center for supplementary information.

In order to determine if programs conducted by your Center meet certain other criteria for inclusion in the research project, a questionnaire is enclosed. The questions refer to the Head Start classes which will begin in late summer or early fall of 1968. As some of the information requested cannot be known at this time, it will be necessary for you to submit estimates which are as accurate as you can make them now. We will sincerely appreciate your completing the questionnaire and returning it to this office by August 5, 1968.

We are most interested in having your program participate in the investigation and we believe that our combined efforts may lead to improved programs of language development in pre-school educational programs.

Thank you for your consideration.

Sincerely,

W. Boyd LeGrand
Director of Research Operations
Committee on Educational Research

Enclosure

UNIVERSITY OF SOUTH CAROLINA
REGIONAL EVALUATION AND RESEARCH CENTER
FOR PROJECT HEAD START

1968-1969 EVALUATION
SAMPLE IDENTIFICATION QUESTIONNAIRE

NAME OF CENTER: _____ Office Tel. No. _____

ADDRESS: _____

_____

CENTER DIRECTOR: _____ Home Tel. No. _____

ADDRESS: _____

_____

Please place an "X" in the appropriate box for each question. If the question calls for a numerical quantity, place the appropriate number in the box.

If any of the items need clarification in order for you to answer them, please feel free to call Mr. Boyd LeGrand or Mr. Robert Branham collect: 803/777-8108, Columbia, South Carolina.

Governing Agency: ☐ Community Action Program ☐ Board of Education

I. LANGUAGE DEVELOPMENT PROGRAM

Yes	No	Number	
☐	☐		1. Is your Head Start Center interested in adopting a new language development program?
☐	☐		2. Are there at least two teachers in your Head Start Center who would be interested in learning a new language development program?
		☐	3. If the answer to #2 is "yes," how many teachers would be interested in learning a new language development program?

Yes	No	Number	
		☐	4. How many of these teachers would be willing to attend a language development training session that may last as long as three weeks? (They would be paid a per diem by the University of South Carolina and their regular salary by the Office of Economic Opportunity. Substitute teachers would be paid by the University of South Carolina during the training period.)
☐	☐		5. Would it be possible for these teachers trained by the University of South Carolina to be assigned to teach the classes in your Head Start Center suggested by the University of South Carolina Evaluation and Research Center?
☐	☐		6. If one of the trained teachers vacates her position, would it be possible to assign another teacher trained by the University of South Carolina personnel to the class vacated by the other teacher?
☐	☐		7. Would the children who were to be tested be at our disposal to be tested as necessary?
☐	☐		8. Would facilities for testing the children be available (rooms, tables, chairs)?
☐	☐		9. Would it be agreeable for observers to visit the selected classes for frequent and intermittent observations?
☐	☐		10. Do all classes begin at the same time? (within three days of each other)
_____			11. If the answer to #10 is "yes," what is the beginning date?
			12. If the answer to #10 is "no," list the date most classes begin and the exceptions.

_____ Date most classes begin

Exceptions:

*Name of Class	**Class No.	Beginning Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

12.

*Name of Class	**Class No.	Beginning Date

* Class name - The name of the class is usually the name of the school, church, or other building in which the class is conducted. (Example - St. Paul's Baptist, Zion Lutheran)

** Class number - Classes that meet in the same building (location) and therefore have the same class name, should be numbered 1, 2, 3, etc. If a location contains only one class, number that class as 1.

If you have additional classes, please list them on a separate page and attach it to the questionnaire.

July 30, 1968

II. TEACHER - CLASS INFORMATION

Table I should be completed according to the following directions:

Column 1: Class name - The name of the class is usually the name of the school, church, or other building in which the class is conducted. (Example - St. Paul's Baptist, Zion Lutheran)

Column 2: Number - Classes that meet in the same building (location) and therefore have the same class name, should be numbered 1, 2, 3, etc. If a location contains only one class, number that class as 1.

Column 3: Rural-Urban - Place an "X" in the "Urban" column if the location in which the class meets is in a place of 10,000 inhabitants or more incorporated or unincorporated as cities, boroughs, towns, or villages. Otherwise, place an "X" in the "Rural Column." Mark only one column for each class.

Column 4: Testing Rooms - This asks for the number of rooms avaliable for testing at each location. If two or more classes meet in one location, record the number of rooms available for testing in that location.

Column 5: Children with no Previous Head Start Experience - For each item, information should pertain ONLY to the children in the class with NO previous Head Start experience. Inasmuch as the classes have not yet been formed, please estimate as accurately as possible answers to the following items.

a. Male - the number of male children with no previous Head Start experience in each class.

b. Female - the number of female children with no previous Head Start experience in each class.

c. Age range - in the space provided give the age of the youngest child in each class, in years and months, and the age of the oldest child, in years and months. This refers only to children with no previous Head Start experience.

d. Ethnic groups - list each ethnic group represented in each class, and the percentage of each group. This still refers only to children with no previous Head Start experience.

Column 6: Language Pattern - This item refers to the language spoken in the classroom, as defined by the following definitions:

(1) Standard English - English whose vocabulary, grammar, and pronounciation does not differ radically from locale to locale, or from region to region.

(2) Dialect English - A variety of English that is used by one group of persons and has features of vocabulary, grammar, or pronounciation distinguishing it from other varieties used by other groups. A local or regional variety of English chiefly oral and orally transmitted and differing distinctively in vocabulary, grammar, and pronounciation from other local or regional varieties and from the standard English language. It is easily recognizable as being different from the language of the listener who uses standard English.

(3) Other language - Any language other than English, e.g., Spanish.

a. Teacher - Place an "X" in the column under "Teacher" which indicates the language spoken by her in the classroom. If the language spoken is other than "Standard English" or "Dialect English," please specify the language (e.g., Spanish, French).

b. Class - Place an "X" in the column under "Class" which indicates the language spoken by the children in the classroom. If the language spoken is other than "Standard English" or "Dialect English," please specify the language.

Column 7: Give the total number of children who will be in each class. This total should include both the children with and without previous Head Start experience. This, too, may be an approximation but please estimate as accurately as possible.

TABLE I

1	2	3		4	5				6						7
CLASS NAME	NUMBER	URBAN	RURAL	TESTING ROOMS	CHILDREN WITH NO PREVIOUS HEAD START EXPERIENCE				LANGUAGE PATTERN						TOTAL
									TEACHER			CLASS			
					MALE	FEMALE	AGE RANGE	ETHNIC GROUPS Example: Negro 70% Indian 30%	STANDARD ENGLISH	DIALECT ENGLISH	OTHER (SPECIFY)	STANDARD ENGLISH	DIALECT ENGLISH	OTHER (SPECIFY)	
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								
							Youngest___yrs.___mos. Oldest ___yrs.___mos.								

TABLE I

1	2	3		4	5			6								7
					CHILDREN WITH NO PREVIOUS HEAD START EXPERIENCE			LANGUAGE PATTERN								
								TEACHER				CLASS				
CLASS NAME	NURSERY	URBAN	RURAL	TESTING ROOMS	MALE	FEMALE	AGE RANGE	ETHNIC GROUPS Example: Negro 70% Indian 30%	STANDARD ENGLISH	DIALECT ENGLISH	(SPECIFY) OTHER	STANDARD ENGLISH	DIALECT ENGLISH	(SPECIFY) OTHER		TOTAL
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									

TABLE I

1	2	3		4	5				6							7
					CHILDREN WITH NO PREVIOUS HEAD START EXPERIENCE				LANGUAGE PATTERN							
									TEACHER				CLASS			
CLASS NAME	NUMBER	URBAN	RURAL	TESTING ROOMS	MALE	FEMALE	AGE RANGE	ETHNIC GROUPS Example: Negro 70% Indian 30%	STANDARD ENGLISH	DIALECT ENGLISH	(SPECIFY) OTHER		STANDARD ENGLISH	DIALECT ENGLISH	(SPECIFY) OTHER	TOTAL
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									
							Youngest___yrs.___mos. Oldest ___yrs.___mos.									

APPENDIX H

Summary of Results from Investigation by Dr. Arthur I. Weiss

of Speech Patterns in Children

USF intra-office memo

Date October 22, 1969
(Dictated October 21, 1969)

From: Dr. Weiss AIW

To: Dr. Lambert

Subject: RE: Henderson Headstart Study

I am enclosing herewith a copy of the report which I sent to Mr. LeGrand dated October 10, 1968.

You will note that I found that 18 of the 22 children whom I tested had "mild-to-strong" southern Negro dialects.

As indicated in my telephone conversation with you of today, I don't believe that the dialect would interfer with the administration of various types of psychological and cognitive-type tests. There were three (3) children who exhibited severely defective speech, and in these cases the communicative handicap would definitely interferewith valid administration of various kinds of tests.

I have an individual analysis for each child and would be glad to discuss this further with you should there be a need.

AIW:cp
Encs.

4133

UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, S. C. 29208

School of Education

October 10, 1968

Mr. W. Boyd LeGrand
Projects Administrator
Committee on Educational Research
School of Education
University of South Carolina
Columbia, South Carolina 29208

Dear Boyd:

You will find the "Summary of Results" enclosed which I prepared covering my investigation of the speech patterns of the children enrolled in the Head Start Program in the Henderson, North Carolina, Center. You will note that eighteen of the twenty-two children whom I tested had "mild" to "strong" Southern Negro Dialects, one had a General American Dialect and three exhibited speech so defective that I did not attempt to assign a dialect pattern for them.

I trust that this type of analysis will prove helpful. Please let me know if there are any questions. I'll try to arrange the trip to Vero Beach in the near future and should be able to assign a date within the next week or two.

Cordially,

Arthur I. Weiss, Ph. D.
Head, Speech Pathology and
Audiology Program

map
enclosure

SUMMARY OF RESULTS

Articulation Errors or "Dialect" Pattern

cription Pattern	Omission or Very Weak Final (d) in "Hand" or "Bed"	Omission or Very Weak Final (t) in "Boat"	Omission or Very Weak Final (k) in "Book"	Omission of Final (f) in "Knife"	Omission of Final (s) in "Dress"	(ɜ˞) for (ɜ) in "Yellow"	(ɔə) for (ɔr) in "Fork"	(ɜ˞) for (ə) in "Balloon"
of ldren playing s Pattern	16	10	11	4	10	4	16	4

Other Articulatory Deviations Observed But Not Systematically Checked With Each Child:

1. (ɜɜ) for (ɑɪ) in "bicycle"
2. (oɔ) for (ɔr) in "your"
3. (ə) for (o) in "yellow"
4. (f) or (t) for (θ) in "teeth"
5. Omission of (v) "five"
6. Omission of (z) "nose"
7. _____
8. _____
9. _____

Other Findings:

1. No. of children exhibiting "Mild" to "Strong" Southern Negro dialect - 13
2. No. of children exhibiting severely defective speech - 3
3. No. of children exhibiting general American dialect - 1

ANALYSIS OF ARTICULATION PATTERNS - HEAD START CHILD CARE DEVELOPMENT CENTERS

Name of Center: OEO Child Care Development Program
Henderson, North Carolina

Number of Children Tested: 12 Cool Springs School Center
Warren County, North Carolina

10 Mitchells Church Center
Franklin, North Carolina

Total 22

Ages of Children Tested: 19 5 years of age

3 4½ years of age

Name of Test Used: Weiss Simplified Articulation and Expressive Language Test For PreSchool Children

Date: October 4, 1968

APPENDIX I

Regional Training Program

Head Start Evaluation 1968-69

Schedule of Daily Activities

SCHEDULE OF DAILY ACTIVITIES

Regional Training Program
Head Start Evaluation 1968-69

University of South Carolina
Head Start Evaluation and Research Center

Committee on Educational Research
School of Education
Columbia, South Carolina

October 1968

Committee on Educational Research
Faculty Involved in Training Program

Dr. Myles Friedman	Chairman, Committee on Educational Research
Dr. George Lackey	Assistant Professor Research Administration
Mr. Garrett Mandeville	Instructor Statistics and Computer Applications
Dr. John Otts	Dean, School of Education
Mr. Charles Statler	Assistant Professor Educational Measurement

University of South Carolina
Head Start Evaluation Training Staff

Mr. Boyd LeGrand	Director of Operations
Mr. Bob Branham	Evaluation Coordinator
Dr. Rebecca Swanson	Special Early Childhood Consultant
Mrs. Rosanne Gmuer	Training Supervisor
Mr. Barry Reinstein	Training Supervisor
Mrs. Mary Ann Pollack	Administrative Assistant
Mrs. Carolyn Brown	Training Assistant
Mrs. Ellen Gibbes	Training Assistant
Mrs. Sidney Hicks	Training Assistant
Mrs. Florence Kiester	Training Assistant

University of South Carolina
Head Start Evaluation Training Roster

Name and Position	USC and Home Address	USC and Home Phon
LeGrand, B., Operations Director	1621 College St. 3321 Fox Hall Rd.	777-5261 782-2856
Branham, R., Eval. Coordinator	1621 College St. 8 Downing	777-5261 782-7898
Swanson, R., Consultant	Columbia College 802 Arcadia Lakes Dr.	754-1100 782-0632
Gmuer, R., Training Supervisor	Wardlaw Building 1525 Woodmont Dr.	777-4887 782-1864
Reinstein, B., Training Supervisor	Wardlaw Building V-2 Paddington Apts	777-4887 252-7877
Pollack, M., Admin. Asst.	Wardlaw Building 3534 Thurmond Rd.	777-4887 782-6412
Brown, C., Training Asst.	1621 College St. 4118 Kilbourne	777-5261 782-3166
Gibbes, E., Training Asst.	1621 College St. 2423 Wilmot Ave.	777-5261 253-3947
Hicks, S., Training Asst.	1621 College St. 2010 Robin Rd.	777-5261 787-5200
Kiester, F., Training Asst.	1621 College St. 1300 Milford Rd.	777-5261 787-3542

Accommodations and Meeting Rooms

Housing Facilities:	Town House Motor Inn 1615 Gervais 253-8324
Main Conference Room:	University of South Carolina School of General Studies Flynn Hall (2nd floor)

Field Training Facilities

Arthur Town Head Start Center Mr. King, Director	Arthurtown, South Carolina 256-1207
Zion Church Community Center Mrs. Mc Collum, Director	801 Washington St. Columbia, S.C.

Head Start Training Conference
Participant Roster

Tulane University

Participant	Number	Group
Bernice Anderson, Teacher 1608 East Railroad St. Gulfport, Miss. 39501	01	A
Billie Deaux, Teacher 2970 Cottage Hill Rd. Mobile, Ala.	02	B
Barbara Jenkins, Teacher 719½ Falcon Lane Biloxi, Miss. 39530.	03	C
Hattie MacWilliam, Teacher 411 S. Washington Ave. Mobile, Ala. 36603	04	D
Lola Montgomery, Teacher 2117 33rd Ave. Gulfport, Miss. 39501	05	A
S. H. Moseley, Teacher 1982 S. Magayne Rd. Mobile, Ala.	06	B
Micki Swain, Teacher 168 Totter Dr. Mobile, Ala	07	C
Marian Teavey 3017 William Harrison Dr. Biloxi, Miss. 39531	08	D
Patricia Felhaus, Monitor 3516 Springhill Ave. Mobile, Ala. 36608	M-1	--
Juanita Quimby, Monitor 415 E. 2nd St. Long Beach, Miss. 39560	M-2	
Linda Nathey, Monitor 3171 Ralston Rd. Mobile, Ala. 36606	M-3	
Virginia Sicotte, Monitor 2212 Kevin Court Handsboro, Miss. 39554	M-4	

Head Start Training Conference
Participant Roster

University of South Carolina

Participant	Number	Group
Vardine Brodie, Teacher 1011 Bickett Blvd. Louisburg, N.C.	09	A
Onalee Coker, Teacher 3060 10th Parkway Vero Beach, Fla. 32960	10	B
Elnora Morehead, Teacher	11	C
JoAnn Dunn, Teacher Route 1, Box 228 Youngsville, N.C. 27596	12	D
Lulu Jenkins, Teacher Route 1, Box 105 Oslo, Fla. 32960	13	A
Estelle Kennis, Teacher 1951 26th Ave. Vero Beach, Fla. 32960	14	B
Leora Davis, Teacher Route 2, Box 199 Norlina, N. C. 27563	15	C
Lee A. Williams, Teacher 3981 46th Pl. Vero Beach, Fla. 32960	16	D
Carolyn Corbett, Monitor Route 3, Box 269 Raleigh, N.C. 27603	M-5	
Sharon Pearce, Monitor 507 South 12th St. Leesburg, Fla. 32748	M-6	

Head Start Training Conference
Participant Roster

University of Texas

Participant	Number	Group
Blanche Balven, Teacher 200 Crockett Austin, Texas 78700	17	A
Patricia Bolete, Teacher 3504 Grooms Austin, Texas	18	B
Eunice Houston, Teacher 1909 Looms, Apt. 202 Austin, Texas	19	C
Constance Gillen, Teacher Route 2, Box 413 Austin, Texas	20	D
Sarah Field, Teacher 1401 B Ashwood Road Austin, Texas	21	A
June Virchow, Teacher 1914 Oldham, Apt. 104 Austin, Texas	22	B
Ann Maurer, Monitor University of Texas Austin, Texas	M-7	
Renato Espinoza, Monitor University of Texas Austin, Texas	M-8	

Schedule of Daily Activities

Monday, October 7, 1968

Time	Location	Agenda
9:00 to 11:45	Flynn Hall	Introductions and Orientation
12:00 to 1:00	Capstone House Cafeteria	Lunch
1:30 to 3:30	Flynn Hall	Demonstration and Discussion of Materials
3:30 to 5:00	Flynn Hall	Study and Discussion of Materials

Schedule of Daily Activities

Time	Location	Agenda
9:00 to 9:30	Flynn Hall	Study
9:30 to 10:00	Travel to Centers	
10:00 to 11:00	At the Centers	Teaching and Observation SESSION I
11:00 to 11:30	At the Centers	Teaching and Observation SESSION II
11:30 to 12:00	Return to Campus	
12:00 to 1:00	Lunch	Capstone House Cafeteria
1:00 to 2:30	Flynn Hall	Study and Discussion
2:30 to 3:00	Travel to Centers	
3:00 to 3:30	At the Centers	Teaching and Observation SESSION III
3:30 to 4:00	Return to Campus	
4:00 to 5:00	Flynn Hall	Study and Discussion

Group Assignments For Participant Teachers

GROUP A

Bernice Anderson
Lola Montgomery
Vardine Brodie
Lulu Jenkins
Blanche Dalven
Sarah Field

GROUP B

Billie Deaux
S. H. Moseley
Onalee Coker
Estelle Kennis
Patricia Belote
June Firchow

GROUP C

Barbara Jenkins
Micki Swain
Elnora Morehead
Leora Davis
Eunice Houston

GROUP D

Hattie MacWilliam
Marian Teavey
JoAnn Dunn
Lee A. Williams
Constance Gillen

Schedule of Participant Assignments in the Field

TUESDAY OCTOBER 8th

		Arthur Town		Zion	
		Room 1	Room 2	Room 1	Room 2
Session I	Group	A	B	C	D
	Teacher	01	02	03	04
Session II	Group	A	B	C	D
	Teacher	05	06	07	08
Session III	Group	A	B	C	D
	Teacher	09	10	11	12
Monitors		M-1 M-2	M-3 M-4	M-5 M-6	M-7 M-8
Trainer		Brown	Gibbs	Hicks	Kiester

WEDNESDAY OCTOBER 9th

Session I	Group	B	A	D	C
	Teacher	14	13	16	15
Session II	Group	B	A	D	C
	Teacher	18	17	20	19
Session III	Group	B	A	D	C
	Teacher	22	21	04	03
Monitors		M-1 M-2	M-3 M-4	M-5 M-6	M-7 M-8
Trainer		Hicks	Gibbs	Brown	Kiester

Schedule of Participant Assignments in the Field

THURSDAY OCTOBER 10th		Arthur Town		Zion	
		Room 1	Room 2	Room 1	Room 2
Session I	Group	C	D	A	B
	Teacher	07	08	01	02
Session II	Group	C	D	A	B
	Teacher	11	12	09	10
Session III	Group	C	D	A	B
	Teacher	15	16	09	10
Monitors		M-3 M-4	M-1 M-2	M-5 M-6	M-7 M-8
Trainer		Brown	Gibbs	Hicks	Kiester

FRIDAY OCTOBER 11th					
Session I	Group	D	C	B	A
	Teacher	20	19	14	13
Session II	Group	D	C	B	A
	Teacher	04	03	18	17
Session III	Group	D	C	B	A
	Teacher	08	07	22	21
Monitors		M-3 M-4	M-1 M-2	M-5 M-6	M-7 M-8
Trainer		Hicks	Gibbs	Brown	Kiester

Schedule of Participant Assignments in the Field

MONDAY OCTOBER 14th

		Arthur Town		Zion	
		Room 1	Room 2	Room 1	Room 2
Session I	Group	A	B	C	D
	Teacher	01	02	11	08
Session II	Group	A	B	C	D
	Teacher	05	06	15	12
Session III	Group	A	B	C	D
	Teacher	09	10	19	16
Monitors		M-5 M-6	M-7 M-8	M-1 M-2	M-3 M-4
Trainer		Brown	Gibbs	Hicks	Kiester

TUESDAY OCTOBER 15th

Session I	Group	B	A	D	C
	Teacher	14	13	20	03
Session II	Group	B	A	D	C
	Teacher	18	17	04	07
Session III	Group	B	A	D	C
	Teacher	22	21	08	11
Monitors		M-5 M-6	M-7 M-8	M-1 M-2	M-3 M-4
Trainer		Hicks	Gibbs	Brown	Kiester

Schedule of Participant Assignments in the Field

THURSDAY
OCTOBER 17th

		Arthur Town		Zion	
		Room 1	Room 2	Room 1	Room 2
Session I	Group	A	B	C	D
	Teacher	02	14	12	19
Session II	Group	A	B	C	D
	Teacher	17	21	08	04
Session III	Group	A	B	C	D
	Teacher	03	06	16	15
Monitors		M-3 M-4	M-1 M-2	M-7 M-8	M-5 M-6
Trainer		Brown	Gibbs	Hicks	Kiester

FRIDAY
OCTOBER 18th

Session I	Group	C	D	A	B
	Teacher	18	05	11	20
Session II	Group	C	D	A	B
	Teacher	07	22	10	01
Monitors		M-5 M-6	M-7 M-8	M-1 M-2	M-3 M-4
Trainer		Hicks	Kiester	Brown	Gibbs

Group Assignments for Participant Teachers

for Swanson Supplement Training

Wed. through Fri., Oct. 16-18th

Group A		Group B	
Billie Deaux	02	Sarah Field	21
Blanche Balven	17	Sheila Moseley	06
Barbara Jenkins	03	Constance Gillen	20
Elnora Morehead	11	Estelle Kennis	14
Onalee Coker	10	Bernice Anderson	01
Lula Jenkins	13	Vardine Brodie	09

Group C		Group D	
Patricia Belote	18	June Firchow	22
JoAnn Dunn	12	Eunice Houston	19
Micki Swain	07	Hattie Williams	04
Marian Peavey	08	Leora Davis	15
Lee Williams	16	Lola Montgomery	05

SCHEDULE OF ACTIVITIES FOR WEDNESDAY, OCTOBER 16th

Location: Flynn Hall

TIME	AGENDA
9:00 to 10:00	Study & Discussion
10:00 to 10:30	Break
10:30 to 12:00	Introduction, Orientation, and Demonstration of Swanson Supplement.
12:00 to 1:00	Lunch
1:00 to 1:30	Study
1:30 to 4:30	Role Playing
4:30 to 5:00	Questions & Discussion

APPENDIX J

Table of F Ratios for Three Way MANOVA on
Metropolitan Readiness Tests Subtests

Source	Degrees of Freedom for Univariate F	Pre-Subtest Univariate F ratios for subtests						Multivariate F Ratio	Degrees of Freedom for Multivariate F
		1	2	3	4	5	6		
RxTxM	5,117	<1	4.61**	<1	<1	2.00	2.12	1.48	30,450
TxM	5,117	<1	<1	1.04	<1	<1	<1	<1	30,450
RxM	1,117	<1	<1	<1	<1	<1	1.89	<1	6,112
RxT	5,117	<1	<1	11.20**	<1	<1	<1	2.35**	30,450
M	1,117	1.84	1.76	1.56	5.91*	<1	<1	1.90	6,112
T	5,117	1.37	<1	5.23	<1	<1	<1	1.35	30,450
R	1,117	<1	<1	18.90**	<1	<1	3.61	3.48**	6,112

* Significant above .05 level.
** Significant above .01 level.

Code: R = Replication
T = Treatment
M = Mode of Test Administration

Table of F Ratios for Three Way MANOVA on
Metropolitan Readiness Tests Subtests

Source	Degrees of Freedom for Univariate F	Post-Subtest Univariate F ratios for subtests						Multivariate F Ratio	Degrees of Freedom for Multivariate F
		1	2	3	4	5	6		
RxTxM	5,117	1.22	1.22	1.18	<1	<1	1.54	1.15	30,450
TxM	5,117	<1	1.11	<1	<1	1.55	<1	<1	30,450
RxM	1,117	1.24	1.58	<1	<1	1.43	<1	<1	6,112
RxT	5,117	1.60	<1	<1	4.93**	<1	<1	1.52*	30,450
M	1,117	7.69**	<1	<1	<1	1.48	2.21	2.31*	6,112
T	5,117	<1	<1	1.47	13.40**	<1	<1	3.10**	30,450
R	1,117	<1	<1	1.31	3.05	<1	<1	<1	6,112

*Significant above .05 level.
**Significant above .01 level.

Code: R = Replication
T = Treatment
M = Mode of Test Administration

APPENDIX K

Intercorrelations of Metropolitan Readiness Tests Subtests
Pretest and Posttest Results

Subtests	1	2	3	4	5	6	
Posttest Correlations	1		0.288	0.008	0.037	-0.040	-0.179	Pretest Correlations
	2	0.026		0.024	0.146	0.001	0.108	
	3	0.074	0.023		0.002	0.076	0.168	
	4	0.243	-0.022	0.305		0.129	0.154	
	5	0.212	0.150	0.326	0.328		0.259	
	6	0.168	0.068	0.458	0.310	0.347		

APPENDIX L

Table of F Ratios for Three Way MANOVA on Gates-MacGinitie Reading Tests-Reading Skills Subtests

Source	Degrees of Freedom for Univariate F	Pre-Subtest Univariate F ratios for subtests								Multivariate F Ratio	Degrees of Freedom for Multivariate F
		1	2	3	4	5	6	7	8		
RxTxM	5,112	1.08	1.66	2.70	1.62	1.00	1.50	1.43	< 1	1.06	40,460
TxM	5,112	< 1	<1	1.13	1.09	2.07	< 1	< 1	<1	< 1	40,460
RxM	1,112	<1	<1	< 1	<1	< 1	< 1	2.52	<1	< 1	8,105
RxT	5,112	1.23	<1	1.55	<1	< 1	1.06	< 1	< 1	< 1	40,460
M	1,112	<1	1.65	< 1	< 1	1.16	< 1	< 1	< 1	< 1	8,105
T	5,112	<1	< 1	3.74**	1.19	1.00	< 1	1.35	1.34	1.29	40,460
R	1,112	5.36**	6.34**	<1	8.10**	1.30	< 1	< 1	< 1	2.53*	8,105

* Significant above .05 level.
** Significant above .01 level.

Code: R = Replication
T = Treatment
M = Mode of Test Administration

Table of F Ratios for Three Way MANOVA on Gates-MacGinitie Reading Tests-Reading Skills Subtests

Source	Degrees of Freedom for Univariate F	Post-Subtest Univariate F ratios for subtests								Multivariate F Ratio	Degrees of Freedom for Multivariate F
		1	2	3	4	5	6	7	8		
RxTxM	5,112	<1	<1	<1	<1	<1	<1	2.01	<1	<1	40,460
TxM	5,112	<1	<1	<1	<1	<1	1.45	1.32	<1	<1	40,460
RxM	1,112	1.00	1.27	<1	<1	1.68	<1	<1	<1	<1	8,105
RxT	5,112	<1	<1	<1	<1	3.21**	<1	2.78*	1.27	1.17	40,460
M	1,112	12.84**	<1	<1	3.64	<1	<1	1.86	<1	1.96	8,105
T	5,112	<1	2.35*	1.29	<1	12.08**	2.58*	1.08	1.60	2.40**	40,460
R	1,112	6.65*	1.61	2.67	<1	1.98	1.60	5.82*	<1	2.88**	8,105

* Significant above .05 level.
** Significant above .01 level.

Code: R = Replication
T = Treatment
M = Mode of Test Administration

APPENDIX M

Intercorrelations of Gates-MacGinitie Reading Tests - Reading Skills Subtests Pretest and Posttest Administrations Results

Subtests	1	2	3	4	5	6	7	8
1		0.230	0.258	0.225	0.001	0.203	0.152	0.026
2	0.294		0.347	0.296	0.145	0.192	0.290	0.028
3	0.274	0.429		0.367	0.052	0.278	0.067	0.244
4	0.321	0.520	0.410		0.192	0.311	0.210	0.044
5	0.107	0.373	0.297	0.348		0.121	0.198	0.150
6	0.078	0.361	0.280	0.333	0.340		0.195	0.102
7	0.240	0.436	0.178	0.291	0.195	0.125		0.156
8	0.107	0.104	0.231	0.170	0.093	0.019	0.104	

Posttest Correlations

Pretest Correlations

APPENDIX N

Table of F Ratios for Two Way Multivariate Analysis on Illinois Test of Psycholinguistic Abilities Subtests

Source	Degrees of Freedom for Univariate F	Univariate F ratios for subtests												Multivariate F Ratio	Degrees of Freedom for Multivariate F
		1	2	3	4	5	6	7	8	9	10	11	12		
Pre-Subtest															
RT	5,130	<1	<1	<1	1.15	<1	<1	<1	3.87**	2.17	1.49	1.22	<1	1.30	60,561
T	5,130	<1	<1	<1	1.82	<1	<1	1.53	<1	2.17	1.27	<1	<1	<1	60,561
R	1,130	7.17**	1.10	2.31	<1	<1	3.98	<1	1.43	<1	10.79**	2.85	1.67	2.69**	12,119
Post-Subtest															
RT	5,130	<1	<1	1.12	2.07	<1	<1	<1	1.61	<1	1.19	<1	1.09	<1	60,561
T	5,130	1.32	<1	1.03	<1	1.18	1.09	1.88	<1	<1	<1	1.36	1.89	1.08	60,561
R	1,130	4.04*	2.08	<1	1.13	<1	1.39	<1	<1	<1	3.74	1.48	5.84*	<1	12,119

* Significant above .05 level.
** Significant above .01 level.

R = Replication
T = Treatment

APPENDIX O

Intercorrelations of Illinois Test of Psycholinguistic Abilities Subtests Pretest and Posttest Administrations Results

Subtests	1	2	3	4	5	6	7	8	9	10	11	12
1		0.311	0.261	0.576	0.127	0.332	0.118	0.320	0.142	0.263	0.219	0.126
2	0.196		0.295	0.414	0.205	0.472	0.315	0.265	0.247	0.311	0.381	0.150
3	0.254	0.158		0.385	-0.036	0.477	0.327	0.216	0.119	0.260	0.251	0.200
4	0.401	0.370	0.402		0.145	0.521	0.330	0.509	0.454	0.386	0.422	0.279
5	-0.043	-0.010	-0.022	0.179		0.059	0.096	0.104	0.255	0.057	0.013	0.113
6	0.288	0.372	0.336	0.449	0.026		0.420	0.243	0.332	0.260	0.321	0.190
7	0.167	0.216	0.322	0.252	-0.024	0.326		0.320	0.281	0.406	0.426	0.276
8	0.110	0.118	0.293	0.286	0.040	0.245	0.356		0.241	0.367	0.405	0.174
9	0.030	0.362	0.186	0.446	0.006	0.347	0.263	0.145		0.256	0.311	0.337
10	0.176	0.148	0.205	0.275	0.025	0.273	0.150	0.280	0.114		0.424	0.206
11	0.355	0.259	0.279	0.480	0.211	0.342	0.427	0.360	0.436	0.114		0.227
12	0.246	0.340	0.149	0.343	0.195	0.353	0.251	0.264	0.177	0.178	0.495	

Posttest Correlations

Pretest Correlations